



WETLAND DELINEATION REPORT

SOMERSET COUNTY EXPANSION PROJECT SOMERSET COUNTY, MARYLAND

March 30, 2020

Prepared For:

Chesapeake Utilities
500 Energy Lane, Suite 100
Dover, Delaware 19901

Attn: Mr. Garth E. Jones, P.E.

Prepared By:

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GTA Project No: 31191824

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm



March 30, 2020

Chesapeake Utilities
500 Energy Lane, Suite 100
Dover, Delaware 19901

Attn: Mr. Garth E. Jones, P.E.

Re: Wetland Delineation Report
Somerset County Expansion Project
Somerset County, Maryland

Dear Mr. Jones:

Pursuant to your request, Geo-Technology Associates, Inc. (GTA) has performed a wetland delineation of the above referenced site. The project area consists of approximately 10.75 miles of buried natural gas pipeline, extending from the intersection of Merser Road and Ocean Highway (U.S. Route 13) southwest to the intersection of U.S. Route 13 and Revells Neck Road, in the Princess Anne area of Somerset County, Maryland. The purpose of the review was to evaluate the presence and extent of wetlands and/or waterways with respect to Federal and State regulatory authority. This Report and the accompanying *Wetland Delineation Plan* summarize GTA's findings.

We appreciate the opportunity to have been of service to you. If you have questions or require additional information, please contact this office at (410) 515-9446.

Sincerely,
GEO-TECHNOLOGY ASSOCIATES, INC.

Justin Weber
Project Scientist

T. Andy Stansfield, Jr.
Vice President

JMW/TAS/cds
31191824

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WETLAND DELINEATION REPORT

SOMERSET COUNTY EXPANSION PROJECT SOMERSET COUNTY, MARYLAND MARCH 30, 2020

1.0 INTRODUCTION

The project area consists of approximately 10.75 miles of buried natural gas pipeline, extending from the intersection of Merser Road and Ocean Highway (U.S. Route 13) southwest to the intersection of U.S. Route 13 and Revells Neck Road, in the Princess Anne area of Somerset County, Maryland. A *Site Location Map* is attached to this Report at *Figure 1*. Geo-Technology Associates, Inc. (GTA) has been retained to provide a review and delineation of the project area's wetlands and/or "waters of the United States."

At the time of GTA's environmental review, the project area consisted primarily of road rights-of-way, wooded areas, open areas, commercial areas with maintained lawns, and paved roadways. The project area exhibits predominantly gentle slopes. The approximate latitude and longitude of the center of the Somerset County Expansion Project area is 38.22603° and -75.69445°, respectively.

2.0 DOCUMENT REVIEW

2.1 Site Plans

GTA personnel utilized a plan titled *Concept Somerset County Gas Main Expansion-Schematic Design Drawing*, prepared by Chesapeake Utilities, and dated May 20, 2019, to conduct a field review of the project area.

2.2 United States Geological Survey Topographic Maps

The United States Geological Survey (USGS) Topographic Maps of the Eden and Princess Anne Quadrangles (*Figure 2*) were used as a reference to identify possible waterways within the project area. The topographic maps were utilized to identify elevations, streams, ponds, and roads. U.S. Route 13 is depicted on the eastern edge of the project area, and numerous local roads are depicted crossing the project area. From north to south, Barkley Branch, Peggy Neck Branch, Tangs Creek, Manokin River, Taylor Branch, Jones Creek, and

Kings Creek are depicted crossing the project area. Areas of wooded marsh or swamp are depicted on the western edge of the project area, at various locations, from approximately milepost 1.0 to milepost 4.0 of the pipeline alignment. Wooded marsh or swamp is also depicted on the western edge of the project area adjacent to Jones Creek and Kings Creek.

2.3 Soil Survey Information

GTA also consulted the Natural Resource Conservation Service (NRCS) *Web Soil Survey*¹ to identify the presence of possible hydric soils, wetlands, and waterways. The *Web Soil Survey* (Figure 3) depicts 23 soil units (Table 1) within the project area. According to the NRCS *Hydric Soils List By State*², 16 soil units are listed as hydric soils.

Table 1: Mapped Soil Units

SYMBOL ¹	NAME/DESCRIPTION ¹	HYDRIC SOIL ²	HYDRIC COMPONENT ²	PERCENTAGE OF MAPPING UNIT ²	POSITION IN LANDSCAPE ²
AoA	Annemessex-Manokin complex, 0 to 2 percent slopes	Yes	Otherllo	8	Flats, depressions, swales
			Fallsington	3	Flats, depressions, drainageways
AoB	Annemessex-Manokin complex, 2 to 5 percent slopes	Yes	Fallsington	11	Flats, depressions, drainageways
CRA	Corsica and Fallsington soils, 0 to 2 percent slopes	Yes	Corsica, undrained	67	Depressions, flats
			Fallsington, undrained	21	Flats, depressions, drainageways, swales
			Mullica	7	Flats, depressions
			Berryland	5	Depressions, flats
EQB	Endoaquepts and Sulfaquepts, 0 to 5 percent slopes	Yes	Endoaquepts, drained	50	Tidal marshes
			Sulfaquepts, drained	40	Tidal marshes
FgdA	Fallsington loams, 0 to 2 percent slopes, Northern Tidewater Area	Yes	Fallsington, undrained	38	Flats, depressions, drainageways, swales
			Fallsington, drained	37	Flats, depressions, swales
			Othello	8	Flats, depressions, drainageways, swales
FhA	Fallsington-Glassboro complex, 0 to 2 percent slopes	Yes	Fallsington, undrained	20	Flats, depressions, drainageways, swales
			Fallsington, drained	20	Flats, depressions, swales
HbB	Hambrook sandy loam, 2 to 5 percent slopes	No			
IkC	Ingleside-Runclint complex, 5 to 10 percent slopes	No			

¹ United States Department of Agriculture, Natural Resource Conservation Service, Somerset County, Maryland, Soil Survey Data Version 16, dated September 13, 2019.

² Hydric soils information available from the United States Department of Agriculture, Natural Resource Conservation Service Soil Data Access Hydric Soils List, accessed on January 21, 2020.

SYMBOL ¹	NAME/DESCRIPTION ¹	HYDRIC SOIL ²	HYDRIC COMPONENT ²	PERCENTAGE OF MAPPING UNIT ²	POSITION IN LANDSCAPE ²
KpA	Keyport silt loam, 0 to 2 percent slopes	Yes	Lenni, drained	5	Flats, depressions, swales
LO	Longmarsh and Indiantown soils, frequently flooded	Yes	Longmarsh	43	Floodplains
			Indiantown	37	Floodplains
			Zekiah	10	Floodplains
			Manahawkin	5	Swamps, floodplains
MdA	Manokin silt loam, 0 to 2 percent slopes	Yes	Elkton	6	Flats, depressions, swales
			Fallsington	4	Flats, depressions, drainageways
NM	Nanticoke and Mannington soils, very frequently flooded, tidal	Yes	Nanticoke	50	Tidal flats, mud flats, floodplains
			Mannington	40	Tidal flats, mud flats, floodplains
			Mispillion	5	Tidal marshes
			Manahawkin	5	Floodplains, swamps
OKA	Othello and Kentuck soils, 0 to 2 percent slopes	Yes	Othello, undrained	40	Flats, depressions, drainageways, swales
			Kentuck, undrained	40	Depressions, drainageways, swales
			Corsica, undrained	5	Depressions, flats, drainageways, swales
			Fallsington, undrained	5	Flats, depressions, drainageways, swales
OtA	Othello silt loams, 0 to 2 percent slopes, Northern Tidewater Area	Yes	Othello, drained	50	Flats, depressions, swales
			Othello, undrained	30	Flats, depressions, drainageways, swales
			Fallsington, undrained	8	Flats, depressions, drainageways, swales
			Kentuck, undrained	7	Flats, depressions, swales
QbB	Queponco loam, 2 to 5 percent slopes	No			
QeA	Queponco silt loam, 0 to 2 percent slopes	No			
QeB	Queponco silt loam, 2 to 5 percent slopes	No			
QuA	Quindocqua silt loam, 0 to 2 percent slopes	Yes	Quindocqua, undrained	45	Flats
			Quindocqua, drained	45	Flats
			Kentuck	3	Depressions, drainageways, swales
			Corsica	1	Depressions, carolina bays
			Hurlock	1	Flats, drainageways
TP	Transquaking and Mispillion soils, very frequently flooded, tidal	Yes	Transquaking	40	Tidal marshes
			Mispillion	40	Tidal marshes
			Sunken	10	Flats, submerged upland tidal marshes
			Honga	5	Submerged upland tidal marshes
			Othello, undrained	5	Flats, depressions, drainageways, swales

SYMBOL ¹	NAME/DESCRIPTION ¹	HYDRIC SOIL ²	HYDRIC COMPONENT ²	PERCENTAGE OF MAPPING UNIT ²	POSITION IN LANDSCAPE ²
UwB	Urban land-Udorthents complex, 0 to 5 percent slopes	No			
W	Water	-			
WddA	Woodstown sandy loam, 0 to 2 percent slopes, Northern Tidewater Area	Yes	Fallsington	6	Depressions, flats, drainageways, swales
WddB	Woodstown sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	Yes	Fallsington, occasionally ponded	6	Swales, flats, depressions, drainageways

2.4 Wetland Indicator Maps

GTA's wetland scientist also consulted the National Wetlands Inventory (NWI)³ for the presence of possible wetlands and waterways. The NWI map depicted multiple wetland and riverine systems within the project area, and within 300 feet of the project area. These wetland and riverine systems are classified with Cowardin designations, as summarized in Table 2.

Table 2: Wetland Indicator Map Classifications

SYMBOL ³	SYSTEM ³	SUBSYSTEM ³	CLASS ³	SUBCLASS ³	WATER REGIME ³	MODIFIERS ³	LOCATION TO PROJECT AREA
R5UBH	Riverine(R)	Unknown Perennial(5)	Unconsolidated Bottom(UB)	N/A	Permanently Flooded(H)	N/A	Passes through project area near milepost 0.48
PFO4Ad	Palustrine(P)	N/A	Forested(FO)	Needle-Leaved Evergreen(4)	Temporarily Flooded(A)	Partially Drained/Ditched(d)	Within project area near milepost 0.92
PFO1A	Palustrine(P)	N/A	Forested(FO)	Broad-Leaved Deciduous(1)	Temporarily Flooded(A)	N/A	25' west of project area near milepost 1.23
PEM1A	Palustrine(P)	N/A	Emergent(EM)	Persistent(1)	Temporarily Flooded(A)	N/A	25' west of project area near milepost 1.33
PFO1A	Palustrine(P)	N/A	Forested(FO)	Broad-Leaved Deciduous(1)	Temporarily Flooded(A)	N/A	Adjacent to project area near milepost 1.64
R5UBH	Riverine(R)	Unknown Perennial(5)	Unconsolidated Bottom(UB)	N/A	Permanently Flooded(H)	N/A	Passes through project area near milepost 1.64
R5UBH	Riverine(R)	Unknown Perennial(5)	Unconsolidated Bottom(UB)	N/A	Permanently Flooded(H)	N/A	Passes through project area near milepost 2.20
PFO1C	Palustrine(P)	N/A	Forested(FO)	Broad-Leaved Deciduous(1)	Seasonally Flooded(C)	N/A	Adjacent to project area near milepost 2.20

³ United States Fish and Wildlife Service, National Wetlands Inventory. Wetlands Mapper. Available online at <<http://www.fws.gov/wetlands/Data/Mapper.html>> and accessed on January 21, 2020.

SYMBOL³	SYSTEM³	SUBSYSTEM³	CLASS³	SUBCLASS³	WATER REGIME³	MODIFIERS³	LOCATION TO PROJECT AREA
PFO4D	Palustrine(P)	N/A	Forested(FO)	Needle-Leaved Evergreen(4)	Continuously Saturated(D)	N/A	50' west of project area near milepost 2.61
PFO4A	Palustrine(P)	N/A	Forested(FO)	Needle-Leaved Evergreen(4)	Temporarily Flooded(A)	N/A	30' west of project area near milepost 2.90
PFO4/EM1A	Palustrine(P) / Emergent (EM)	N/A	Forested(FO) / Emergent (EM)	Needle-Leaved Evergreen / Persistent(1)	Temporarily Flooded(A)	N/A	20' west of project area near milepost 3.15
PEM1A	Palustrine(P)	N/A	Emergent(EM)	Persistent(1)	Temporarily Flooded(A)	N/A	20' west of project area near milepost 3.41
PFO1/4A	Palustrine(P)	N/A	Forested(FO)	Broad-Leaved Deciduous(1) / Needle-Leaved Evergreen(4)	Temporarily Flooded(A)	N/A	Adjacent to project area near milepost 3.63
PFO4A	Palustrine(P)	N/A	Forested(FO)	Needle-Leaved Evergreen(4)	Temporarily Flooded(A)	N/A	Within project area along milepost 3.73
PFO1/4A	Palustrine(P)	N/A	Forested(FO)	Broad-Leaved Deciduous(1) / Needle-Leaved Evergreen(4)	Temporarily Flooded(A)	N/A	Within project area near milepost 3.89
E1UBL	Estuarine(E)	Subtidal(1)	Unconsolidated Bottom(UB)	N/A	Subtidal(L)	N/A	Passes through project area near milepost 6.11
E2EM1P	Estuarine(E)	Intertidal(2)	Emergent(EM)	Persistent(1)	Irregularly Flooded(P)	N/A	60' west of project area near milepost 6.14
E2EM1P	Estuarine(E)	Intertidal(2)	Emergent(EM)	Persistent(1)	Irregularly Flooded(P)	N/A	Within project area near milepost 6.27
PUBHx	Palustrine(P)	N/A	Unconsolidated Bottom(UB)	N/A	Permanently Flooded(H)	Excavated(x)	Within project area near milepost 7.35
R5UBH	Riverine(R)	Unknown Perennial(5)	Unconsolidated Bottom(UB)	N/A	Permanently Flooded(H)	N/A	Passes through project area near milepost 7.62
E2EM1P	Estuarine(E)	Intertidal(2)	Emergent(EM)	Persistent(1)	Irregularly Flooded(P)	N/A	Adjacent to project area near milepost 7.62
R5UBH	Riverine(R)	Unknown Perennial(5)	Unconsolidated Bottom(UB)	N/A	Permanently Flooded(H)	N/A	Passes through project area near milepost 8.36
PFO1A	Palustrine(P)	N/A	Forested(FO)	Broad-Leaved Deciduous(1)	Temporarily Flooded(A)	N/A	Adjacent to project area near milepost 8.36
E1UBL	Estuarine(E)	Subtidal(1)	Unconsolidated Bottom(UB)	N/A	Subtidal(L)	N/A	Passes through project area near milepost 8.90
E2EM1P	Estuarine(E)	Intertidal(2)	Emergent(EM)	Persistent(1)	Irregularly Flooded(P)	N/A	25' west of project area near milepost 8.88
E2EM1P	Estuarine(E)	Intertidal(2)	Emergent(EM)	Persistent(1)	Irregularly Flooded(P)	N/A	Adjacent to project area near milepost 8.95

2.5 Aerial Photographs

GTA reviewed aerial photographs, dated 1998, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2018 for evidence of waters and wetlands within the project area utilizing the Maryland Environmental Resource & Land Information Network (MERLIN). The aerial photographs depict the project area in generally the same condition that it is currently. Several potential streams and saturated or inundated areas were noted within the project area, or within the vicinity of project area, on the aerial photographs. These areas were noted and evaluated in the field.

3.0 METHODOLOGY

3.1 General Methodology

The purpose of GTA's review was to evaluate the presence and extent of wetlands and waterways with respect to Federal and State jurisdictional authority. GTA based its evaluation on the United States Army Corps of Engineers' (Corps) definition of "waters of the U.S." and "navigable waters of the U.S.," which are defined in Title 33 Code of Federal Regulations (CFR), Parts 328 and 329. GTA employed the three-parameter approach set forth in the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-01*, dated 1987 (*1987 Manual*) and the *Corps Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*, dated November 2010 (*Supplement*) as a reference for delineating wetlands. The methodology of wetland delineation included identifying hydric soil, wetland hydrology, and dominant hydrophytic vegetation. GTA also considered other regulated waters of the United States, such as ponds, lakes, streams, and rivers. If these waters were observed on the property, GTA incorporated them into the nontidal wetland delineation and labeled them accordingly.

3.2 Hydrology

The *1987 Manual* defines wetland hydrology as the sum of the total wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation. *The 1987 Manual* further defines areas with evident characteristics of wetland hydrology as those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions.

Wetland hydrology exists when a minimum of one primary indicator or two secondary indicators are present. Indicators of wetland hydrology are generally derived from observations of surface water or saturated soils, evidence of recent inundation, evidence of current or recent soil saturation, and evidence from other site conditions or data. Additional evidence of wetland hydrology can also be used with appropriate documentation.

3.3 Vegetation

Hydrophytic vegetation can be defined as plant life growing in water or on a substrate that is at least periodically inundated by water. The USFWS has assigned an indicator status to plants that occur in and around wetlands, describing how often that species is found in a wetland:

Obligate Wetland (OBL): Occur in wetlands with an estimated 99% probability.

Facultative Wetland (FACW): Usually occur in wetlands, with an estimated 67%-99% probability.

Facultative (FAC): Equally likely to occur in wetlands and uplands, with an estimated 34%-66% probability of occurring in wetlands.

Facultative Upland (FACU): Usually occur in uplands, with an estimated 67%-99% probability of occurring in uplands.

Obligate Upland (UPL): Occur in uplands with an estimated 99% probability.

For vegetation within a community to be determined hydrophytic in accordance with the *Supplement*, it must pass the Dominance Test, where more than 50% of the dominant plant species observed must have the indicator statuses OBL, FACW, and FAC. If the vegetation observed in the community fails the Dominance Test and indicators of wetland hydrology and hydric soils are present, the Prevalence Index should be applied. Hydrophytic vegetation is present if a Prevalence Index of 3.0 or less is determined.

3.4 Soils

A hydric soil is defined as a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions (*Supplement*). According to the *Supplement*, indicators of hydric soils form mostly from the loss or accumulation of iron, manganese, sulfur, or carbon compounds during saturated and anaerobic conditions.

3.5 On-Site Data Collection

Data Collection Points (DCPs) were established on-site at locations to evaluate the presence of jurisdictional wetlands and waterways, and to demonstrate the typical characteristics of uplands and wetlands. In areas where hydrologic indicators were observed with hydrophytic vegetation, GTA personnel excavated or augured test pits in the ground to a depth of 20 inches or more to observe features of the soil column. GTA personnel reviewed soil samples from test pits at numbered DCPs in order to describe and classify the soil as either hydric or non-hydric. At these DCPs, GTA personnel also evaluated the surrounding vegetative species and hydrologic indicators. Data Forms were prepared to record observations of the conditions within the wetland areas. Data Forms were also prepared to record data from adjacent upland areas to further support the delineation in the field. The DCPs have been labeled as DCP-1 through DCP-12. Data Forms with reference photographs are included in Appendix B to support the delineation depicted on the accompanying *Wetland Delineation Plan*.

3.6 Delineation

In January and March 2020, GTA's wetland scientists performed an on-site review to evaluate whether jurisdictional wetlands and/or waterways are present within the project area. GTA's field delineation of jurisdictional "waters of the U.S." consisted of identifying the limits of the wetlands and waterways with pink and black striped flags, numbered sequentially. Wetland flags were hung at the time of GTA's field visits. GTA used the base plan described in *Section 2.1* to navigate the site. Wetland and waterway flag locations were located in the field in January and March 2020 using a Trimble Geo-XH handheld global positioning system (GPS) rated with sub-meter accuracy, and are shown on the accompanying *Wetland Delineation Plan*.

4.0 WETLANDS AND WATERBODIES IDENTIFIED

Five (5) wetlands and nine (9) waterbodies were identified within or near the project area and are described in the following section. Table 3 identifies wetlands within or near the project area, and Table 4 identifies waterbodies within or near the project area.

Table 3: Wetlands

Wetland Designation ⁴	Cowardin NWI Classification ⁵	Land Within the Project area (acres)	EEM Wetland area (acres)	PFO Wetland area(acres)	PEM Wetland area(acres)
1	EEM	--- ⁶	---	---	---
2	EEM/PEM	.08	.08	---	--- ⁷
3	PEM	.07	---	---	.07
4	EEM/PEM	.03	.003	---	.03
5	EEM/PFO/PEM	.08	.003	--- ⁸	.08
Total EEM			.09	---	---
Total PFO			---	---	---
Total PEM			---	---	.18
Total Wetland			0.27		

Table 4 - Waterbodies

Waterbody Designation	Waterbody Width (Feet)	Waterbody Name ⁹	Waterbody Type ¹⁰
A	26	Barkley Branch	Perennial
B	40	Peggy Neck Branch	Perennial
C	11	Tangs Creek	Perennial
D	65	Manokin River	Perennial-Tidal
E	18	Unnamed Tributary of Manokin River	Intermittent
F	13	Unnamed Tributary of Manokin River	Intermittent
G	14	Taylor Branch	Perennial-Tidal
---	---	Jones Creek ¹¹	Perennial
H	56	Kings Creek	Perennial-Tidal

⁴ Field designations represent unique identifiers assigned to each wetland during field observations.

⁵ Wetland classifications are based on the Cowardin classification system whereby:

PEM = Palustrine Emergent

PFO = Palustrine Forested

EEM = Estuarine Emergent

⁶ Wetland 1 is located slightly outside of the project area.

⁷ The PEM portion of Wetland 2 is located outside of the project area.

⁸ The PFO portion of Wetland 5 is located outside of the project area.

⁹ As identified on USGS Topographic Series 7.5-minute maps.

¹⁰ Waterbody type includes perennial, intermittent, or ephemeral. A perennial stream has flowing water year-round during a typical year. Perennial streams are identified as solid blue lines on the USGS Topographic maps. An intermittent stream has flowing water during certain times of the year when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Intermittent streams are identified as dashed blue lines on the USGS Topographic maps. Ephemeral channels only flow during precipitation events or spring snow melt. They are not depicted on USGS Topographic Maps.

¹¹ Within the project area, Jones Creek flows through a concrete box culvert that runs from the U.S. Route 13 median strip, beneath U.S. Route 13 southbound and adjacent Market Lane, before discharging on the western side of Market Lane.

4.1 Wetland 1: EEM

Wetland 1 is an emergent wetland abutting the north bank of Waterbody D (Manokin River). Wetland 1 is located slightly outside of the project area. It should be noted that according to Chapter 26.23.06.02 of the Code of Maryland Regulations (COMAR), as well as correspondence with the Maryland Department of Natural Resources (DNR), this wetland is designated as a Wetland of Special State Concern. Within Wetland 1, GTA's wetland scientists observed predominantly hydrophytic vegetation, including sweetgum (*Liquidambar styraciflua*, FAC), narrowleaf cattail (*Typha angustifolia*, OBL), and crimsoneyed rosemallow (*Hibiscus moscheutos*, OBL). Evidence of primary indicators of wetland hydrology observed by GTA's wetland scientists included indicators A2 (High Water Table), A3 (Saturation), and B3 (Drift Deposits). GTA personnel excavated test pits to depths of 20 inches within the limits of the wetland boundary and observed the NRCS and Corps hydric soils field indicator F3 (Depleted Matrix).

4.2 Wetland 2: EEM/PEM

Wetland 2 is an emergent wetland located west of U.S. Route 13, and south of Deal Island Road. Wetland 2 abuts the Manokin River, and consists of both tidal and nontidal portions. The nontidal portion of Wetland 2 is located slightly outside of the project area. Within the vegetation plot, GTA's wetland scientists observed predominantly hydrophytic vegetation species, including bald cypress (*Taxodium distichum*, OBL), crimsoneyed rosemallow, Pennsylvania smartweed (*Polygonum pennsylvanicum*, FACW), and narrowleaf cattail. Evidence of primary indicators of wetland hydrology observed by GTA's wetland scientists included indicators A2 (High Water Table), A3 (Saturation), and B3 (Drift Deposits). GTA personnel excavated test pits to depths of 20 inches within the limits of the wetland boundary and observed the NRCS and Corps hydric soils field indicator A9 (1 cm Muck).

4.3 Wetland 3: PEM

Wetland 3 is an emergent wetland located west of U.S. Route 13 and east of Libby Lane, near milepost 7.35. Within the vegetation plot, GTA's wetland scientists observed predominantly hydrophytic vegetation species, including sweetgum, red maple (*Acer rubrum*, FAC), common reed (*Phragmites australis*, FACW), and common rush (*Juncus effusus*, OBL).

Evidence of primary indicators of wetland hydrology observed by GTA's wetland scientist included indicators A1 (Surface Water), A2 (High Water Table), A3 (Saturation), and B9 (Water Stained Leaves). Evidence of secondary indicators of wetland hydrology observed included indicators D2 (Geomorphic Position) and D5 (positive FAC-Neutral Test). GTA personnel excavated test pits to depths of 20 inches within the limits of the wetland boundary and observed the NRCS and Corps hydric soils field indicator F3 (Depleted Matrix).

4.4 Wetland 4: EEM/PEM

Wetland 4 is an emergent wetland located west of U.S. Route 13, and north of North Central School Road. Wetland 4 abuts Taylor Branch, and consists of both tidal and nontidal portions, within the project area. It should be noted that according to COMAR Chapter 26.23.06.02, as well as correspondence with the DNR, this wetland is considered a Wetland of Special State Concern. Within the vegetation plot, GTA's wetland scientists observed predominantly hydrophytic vegetation species, including red maple, boxelder (*Acer negundo*, FAC), redosier dogwood (*Cornus sericea*, FACW), common reed, and common rush. Evidence of primary indicators of wetland hydrology observed by GTA's wetland scientists included indicator A3 (Saturation). Evidence of secondary indicators of wetland hydrology observed included indicators C9 (Saturation Visible on Aerial Imagery), and D5 (positive FAC-Neutral Test). GTA personnel excavated test pits to depths of 20 inches within the limits of the wetland boundary and observed the NRCS and Corps hydric soils field indicator F3 (Depleted Matrix).

4.5 Wetland 5: PEM

Wetland 5 is a forested and emergent wetland located west of U.S. Route 13 and north of Perry Road. Wetland 5 abuts Kings Creek, and consists of both tidal and nontidal portions, within the project area. The forested portion of Wetland 5 is located outside of the project area. Within the vegetation plot, GTA's wetland scientists observed predominantly hydrophytic vegetation species, including wax myrtle (*Morella cerifera*, FAC), black willow (*Salix nigra*, OBL), and common reed. Evidence of primary indicators of wetland hydrology observed by GTA's wetland scientists included indicators A1 (Surface Water), A2, (High Water Table), A3 (Saturation), B7 (Inundation Visible on Aerial Imagery), and B9 (Water Stained Leaves). Evidence of secondary indicators of wetland hydrology observed included indicators B8

(Sparsely Vegetated Concave Surface), D2 (Geomorphic Position), and D5 (positive FAC-Neutral Test). GTA personnel excavated test pits to depths of 20 inches within the limits of the wetland boundary and observed the NRCS and Corps hydric soils field indicators A9 (1cm Muck) and F3 (Depleted Matrix).

4.6 Waterbody A: Perennial Stream (Barkley Branch)

Waterbody A originates east of the project area and conveys flow through a culvert beneath U.S. Route 13 and northwest across the project area, near milepost 0.48. An ordinary high water mark (OHWM) and a defined bed and bank were observed within the limits of the stream channel within the project area.

4.7 Waterbody B: Perennial Stream (Peggy Neck Branch)

Waterbody B originates east of the project area and conveys flow through a culvert beneath U.S. Route 13 and northwest across the project area, near milepost 1.64, north of Peggy Neck Road. An OHWM and a defined bed and bank were observed within the limits of the stream channel within the project area.

4.8 Waterbody C: Perennial Stream (Tangs Creek)

Waterbody C originates east of the project area and conveys flow through a culvert beneath U.S. Route 13 and northwest across the project area, near milepost 2.21. An OHWM and a defined bed and bank were observed within the limits of the stream channel within the project area.

4.9 Waterbody D: Tidal River (Manokin River)

Waterbody D originates east of the review area and conveys flow southwest beneath a bridge conveying U.S. Route 13 and continues west and south outside of the project area. Waterbody D is named the Manokin River, and is a tributary of the Chesapeake Bay. An OHWM and a defined bed and bank were observed within the limits of the stream channel within the project area.

4.10 Waterbody E: Intermittent Stream

Waterbody E originates east of the project area and conveys flow through a culvert beneath U.S. Route 13 and west across the project area, near milepost 6.70. An OHWM and a defined bed and bank were observed within the limits of the stream channel within the project area.

4.11 Waterbody F: Intermittent Stream

Waterbody F originates east of the project area and conveys flow through a culvert beneath U.S. Route 13 and northwest across the project area, near milepost 6.91, north of Stewart Neck Road. An OHWM and a defined bed and bank were observed within the limits of the stream channel within the project area.

4.12 Waterbody G: Tidal River (Taylor Branch)

Waterbody G originates east of the project area and conveys flow through a culvert beneath U.S. Route 13 and west across the project area, near milepost 7.59, north of North Central School Road. Waterbody G is named Taylor Branch and is a tributary of the Manokin River. An OHWM and a defined bed and bank were observed within the limits of the stream channel within the project area.

4.13 Perennial Stream (Jones Creek)

Jones Creek originates east of the project area and conveys flow through a box culvert beneath U.S. Route 13 and the adjacent Market Lane, near milepost 8.33, north of King Miller Road. The box culvert discharges on the west side of Market Lane. Jones Creek was not flagged in the field, as the portion within and immediately adjacent to the project area is contained within the box culvert.

4.14 Waterbody H: Tidal River (Kings Creek)

Waterbody H originates east of the project area and conveys flow through a box culvert beneath U.S. Route 13 and west across the project area, near milepost 8.86, north of Perry Road. Waterbody H is named Kings Creek and is a tributary of the Manokin River. An OHWM and a defined bed and bank were observed within the limits of the stream channel within the project area.

5.0 OTHER FEATURES

5.1 Drainage Ditches

GTA's wetland scientists observed several drainage ditches within the project area. These ditches are located adjacent to U.S. Route 13 throughout the length of the project. These drainage ditches appear to have been constructed within uplands and wholly drain uplands, and in GTA's professional opinion, should not be considered jurisdictional features.

6.0 CONCLUSION

The waterbodies and wetlands identified within the project area, in GTA's professional opinion, exhibited characteristics of "waters of the U.S." or all three wetland parameters. These areas were flagged in the field and are identified on the *Wetland Delineation Plan* (Appendix D).

As a result of the environmental review of the site, it is GTA's professional opinion that there are jurisdictional nontidal wetlands, nontidal waterways, tidal wetlands, and tidal waterways present within the project area. Our conclusions regarding this site have been based on observations of existing conditions, professional experience in the area with similar projects, and generally accepted professional environmental practice under similar circumstances. Seasonal fluctuations in precipitation or weather conditions can result in differences in the perception of hydrologic conditions, which can alter GTA's evaluation of wetlands/waterways. It is important to note that this delineation is GTA's professional opinion, only. Decisions regarding the official jurisdictional status of wetlands/waterways are made by federal, state and / or local regulatory agencies.

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******* END OF REPORT *******

APPENDIX A

FIGURES

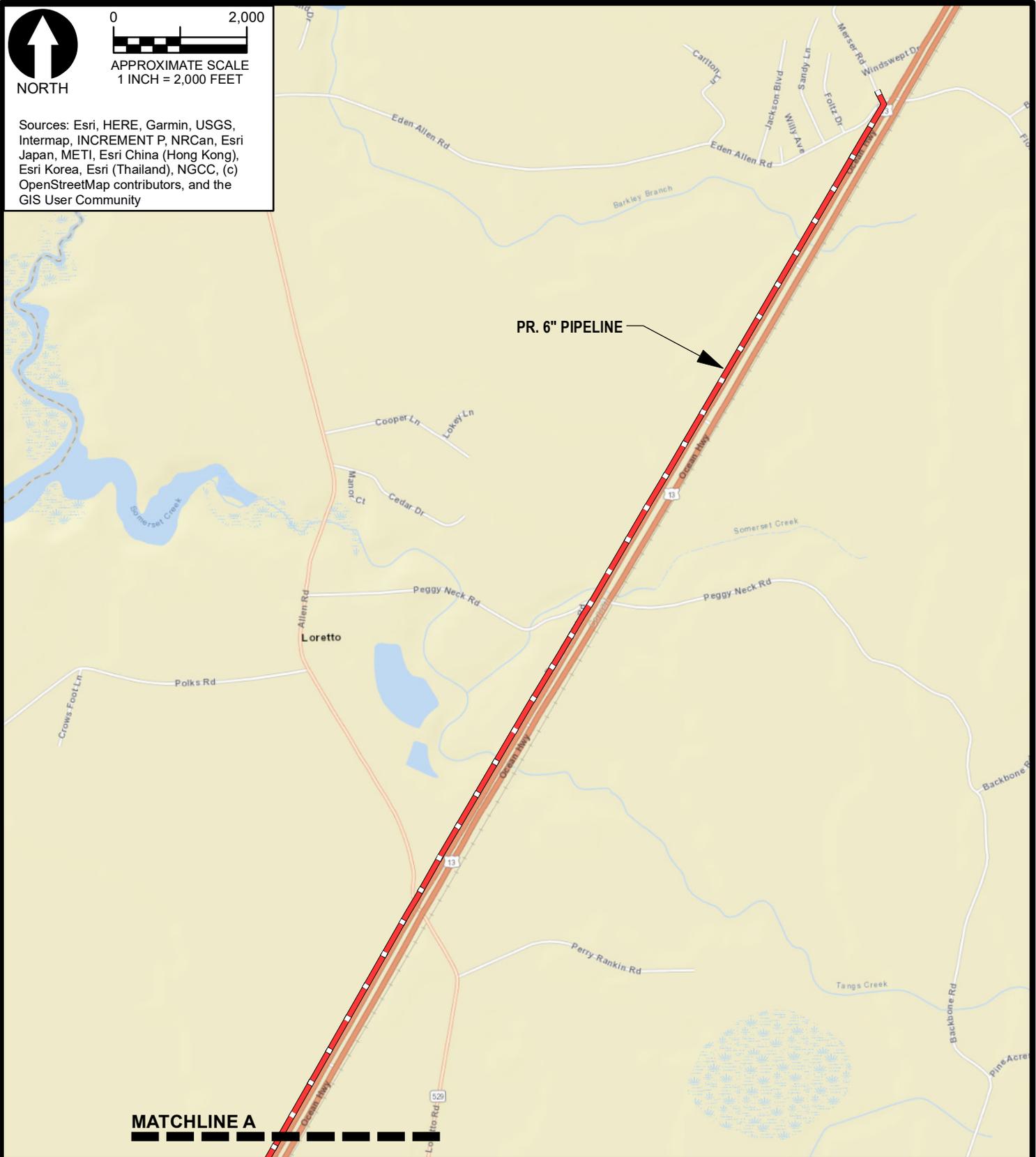


NORTH

0 2,000

APPROXIMATE SCALE
1 INCH = 2,000 FEET

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



PR. 6" PIPELINE

MATCHLINE A



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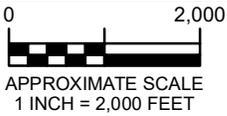
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SITE LOCATION MAP SOMERSET COUNTY EXPANSION PROJECT

SOMERSET COUNTY, MARYLAND

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APPROXIMATE SCALE
1 INCH = 2,000 FEET

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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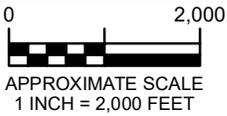
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DATE: MARCH 24, 2020

DRAWN BY: MAJ

REVIEW BY: TAS

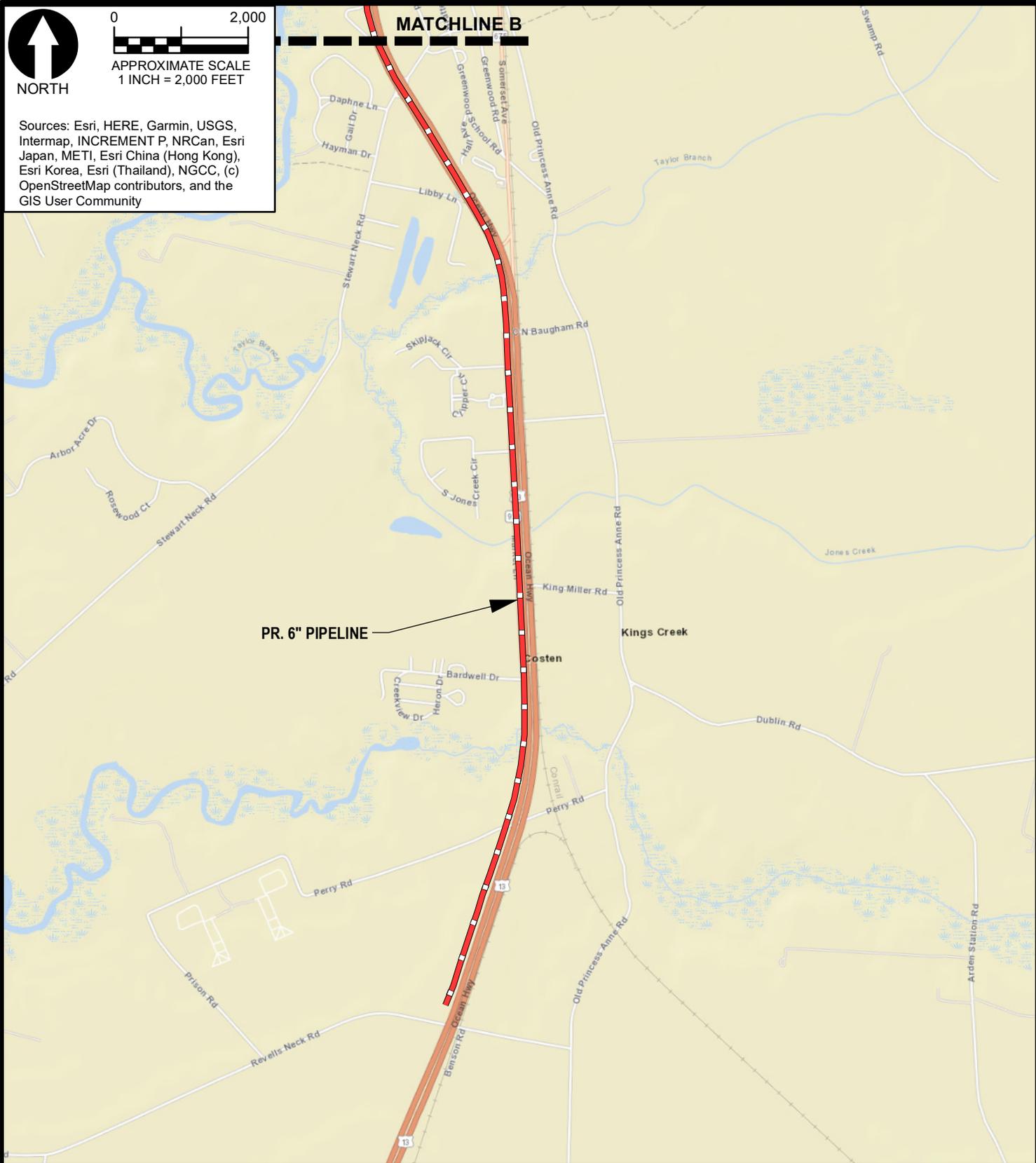
FIGURE: 1B



APPROXIMATE SCALE
1 INCH = 2,000 FEET

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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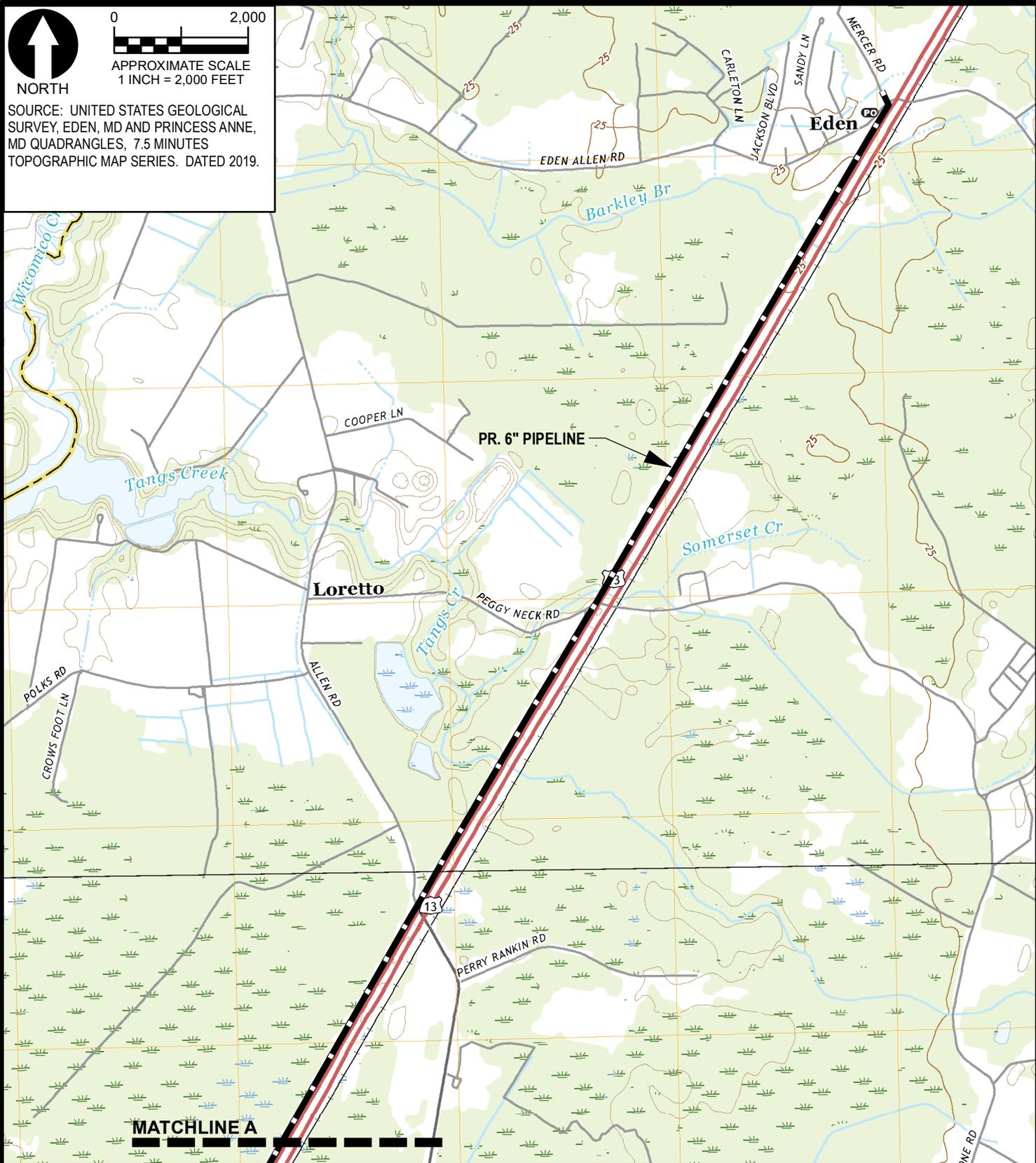


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APPROXIMATE SCALE
1 INCH = 2,000 FEET

NORTH

SOURCE: UNITED STATES GEOLOGICAL SURVEY, EDEN, MD AND PRINCESS ANNE, MD QUADRANGLES, 7.5 MINUTES TOPOGRAPHIC MAP SERIES. DATED 2019.



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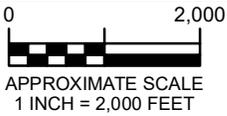
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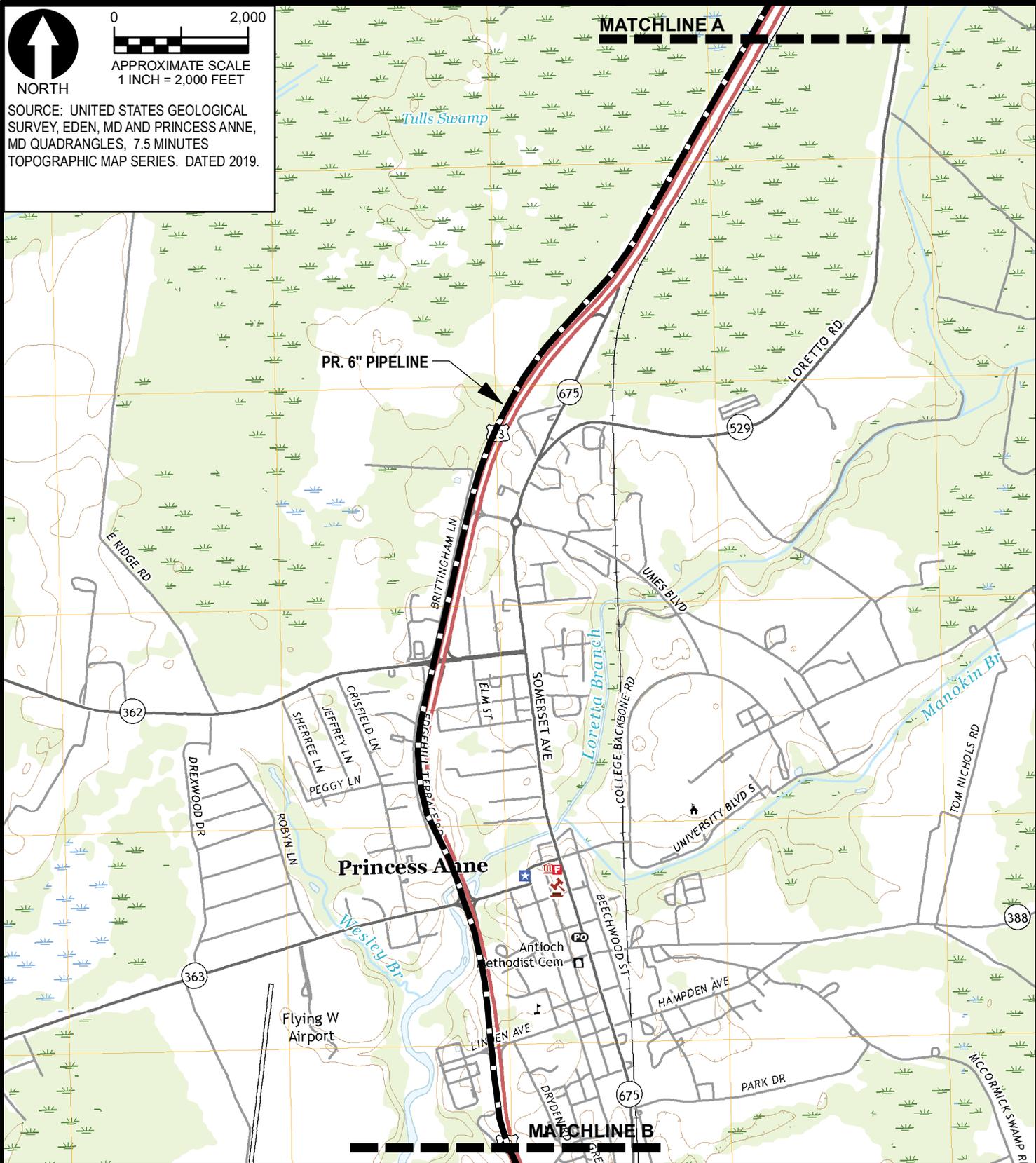
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 SOURCE: UNITED STATES GEOLOGICAL SURVEY, EDEN, MD AND PRINCESS ANNE, MD QUADRANGLES, 7.5 MINUTES TOPOGRAPHIC MAP SERIES. DATED 2019.



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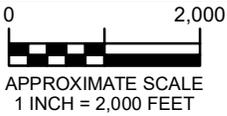
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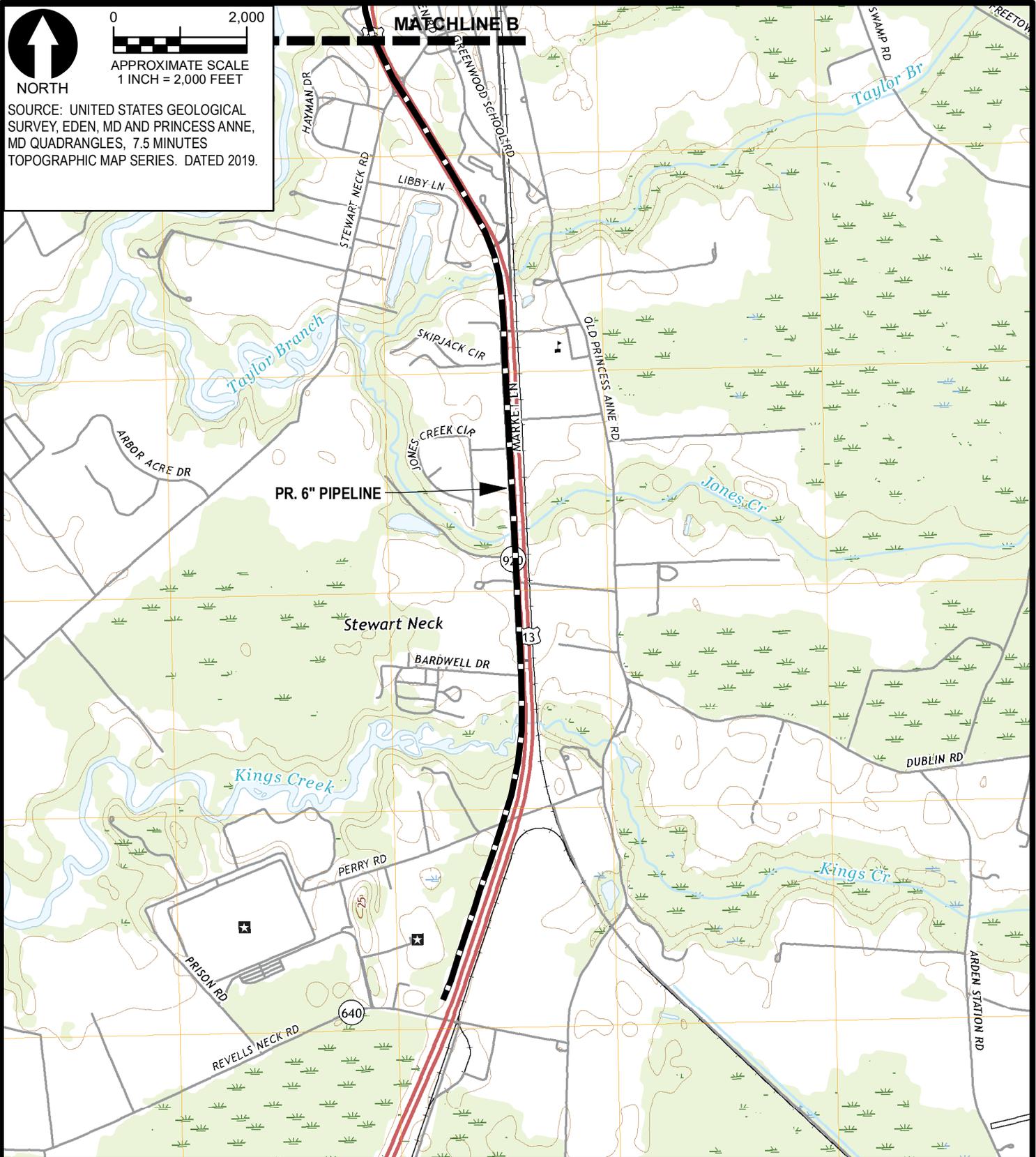
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NORTH
 SOURCE: UNITED STATES GEOLOGICAL SURVEY, EDEN, MD AND PRINCESS ANNE, MD QUADRANGLES, 7.5 MINUTES TOPOGRAPHIC MAP SERIES. DATED 2019.



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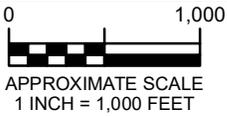
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SOURCE: UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. GRIDDED SOIL SURVEY GEOGRAPHIC (gSSURGO) DATABASE FOR MARYLAND. IMAP. MD iMAP, USDA



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SOIL SURVEY MAP
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 SOMERSET COUNTY, MARYLAND

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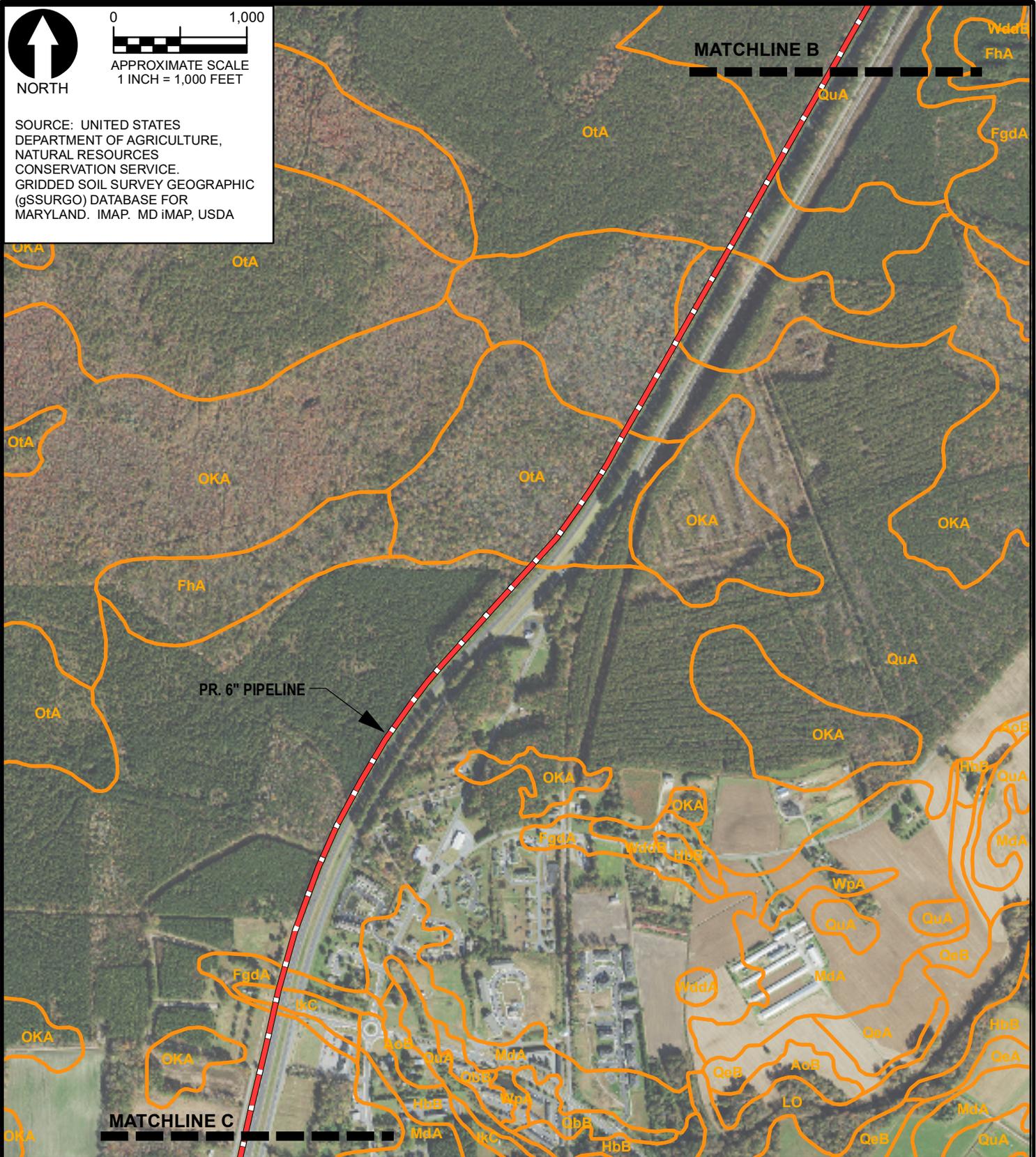
NORTH

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APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: UNITED STATES
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NATURAL RESOURCES
CONSERVATION SERVICE.
GRIDDED SOIL SURVEY GEOGRAPHIC
(gSSURGO) DATABASE FOR
MARYLAND. IMAP. MD iMAP, USDA



PR. 6" PIPELINE

MATCHLINE B

MATCHLINE C



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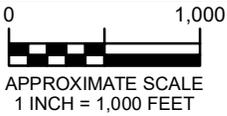
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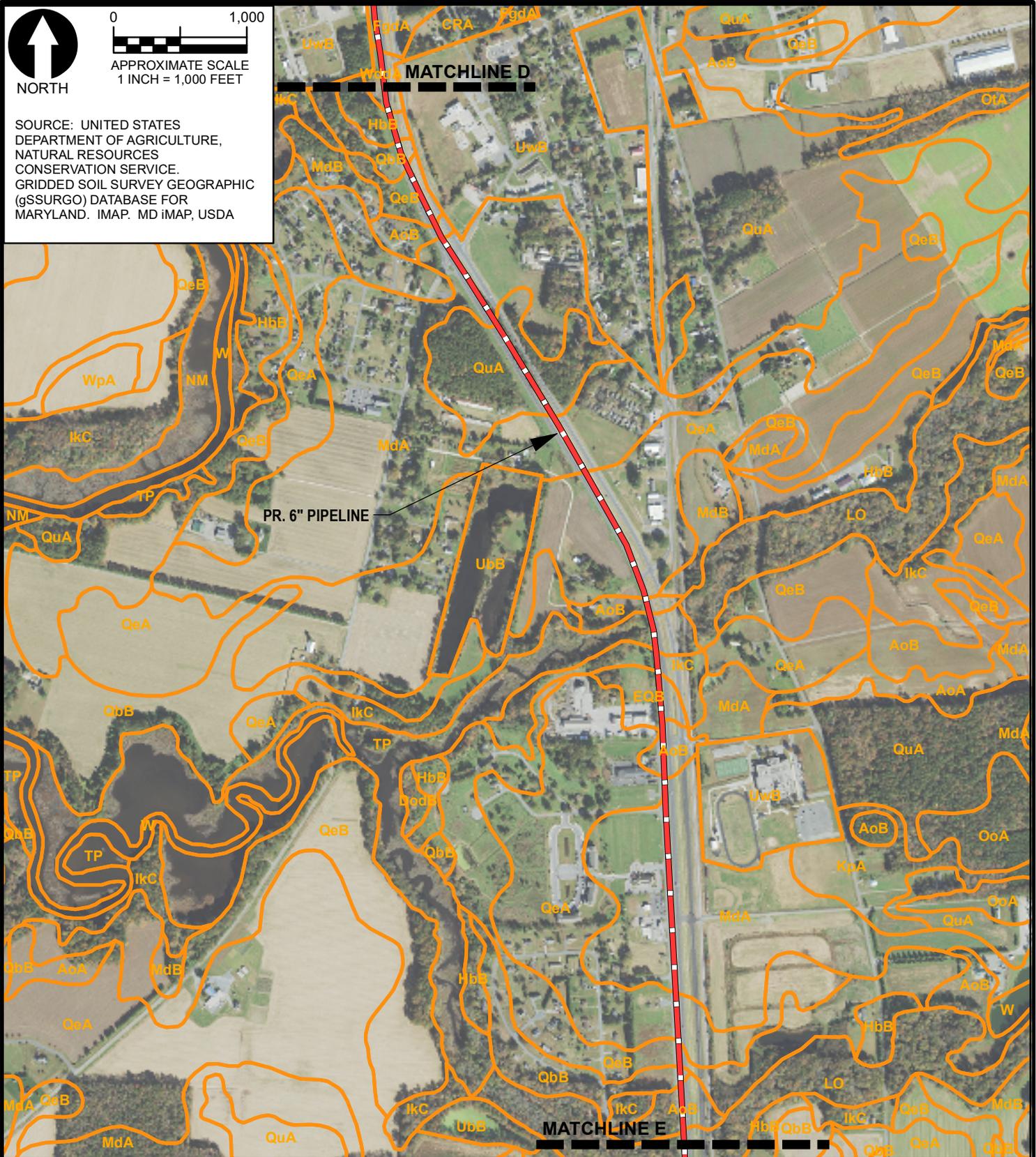
SOIL SURVEY MAP SOMERSET COUNTY EXPANSION PROJECT

SOMERSET COUNTY, MARYLAND

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SOURCE: UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. GRIDDED SOIL SURVEY GEOGRAPHIC (gSSURGO) DATABASE FOR MARYLAND. I MAP. MD I MAP, USDA



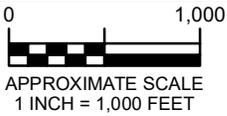
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MATCHLINE E

PR. 6" PIPELINE



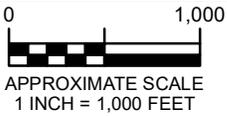
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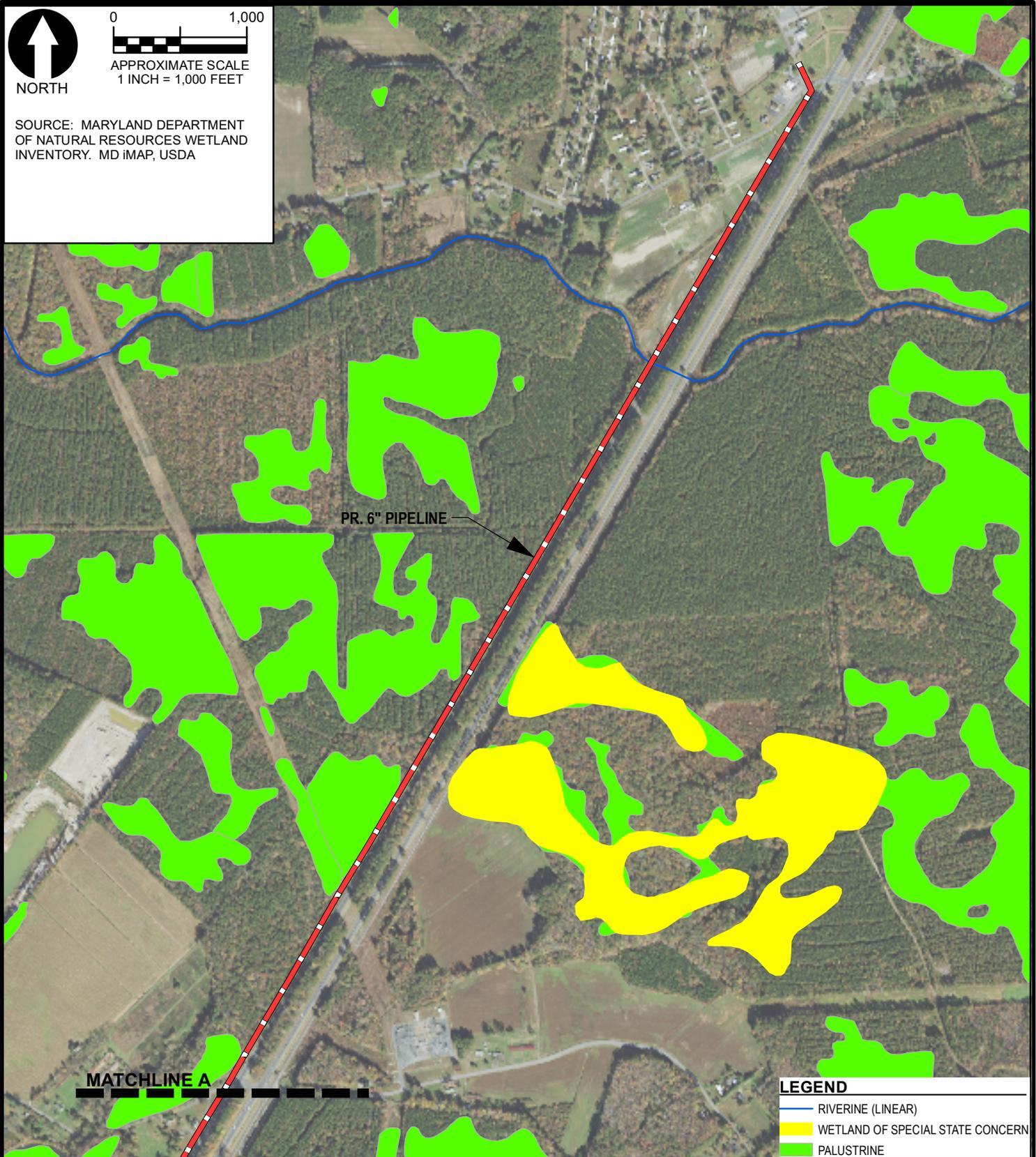
SOMERSET COUNTY, MARYLAND

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APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: MARYLAND DEPARTMENT
OF NATURAL RESOURCES WETLAND
INVENTORY. MD iMAP, USDA



PR. 6" PIPELINE

MATCHLINE A

LEGEND

-  RIVERINE (LINEAR)
-  WETLAND OF SPECIAL STATE CONCERN
-  PALUSTRINE



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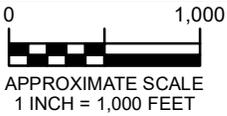
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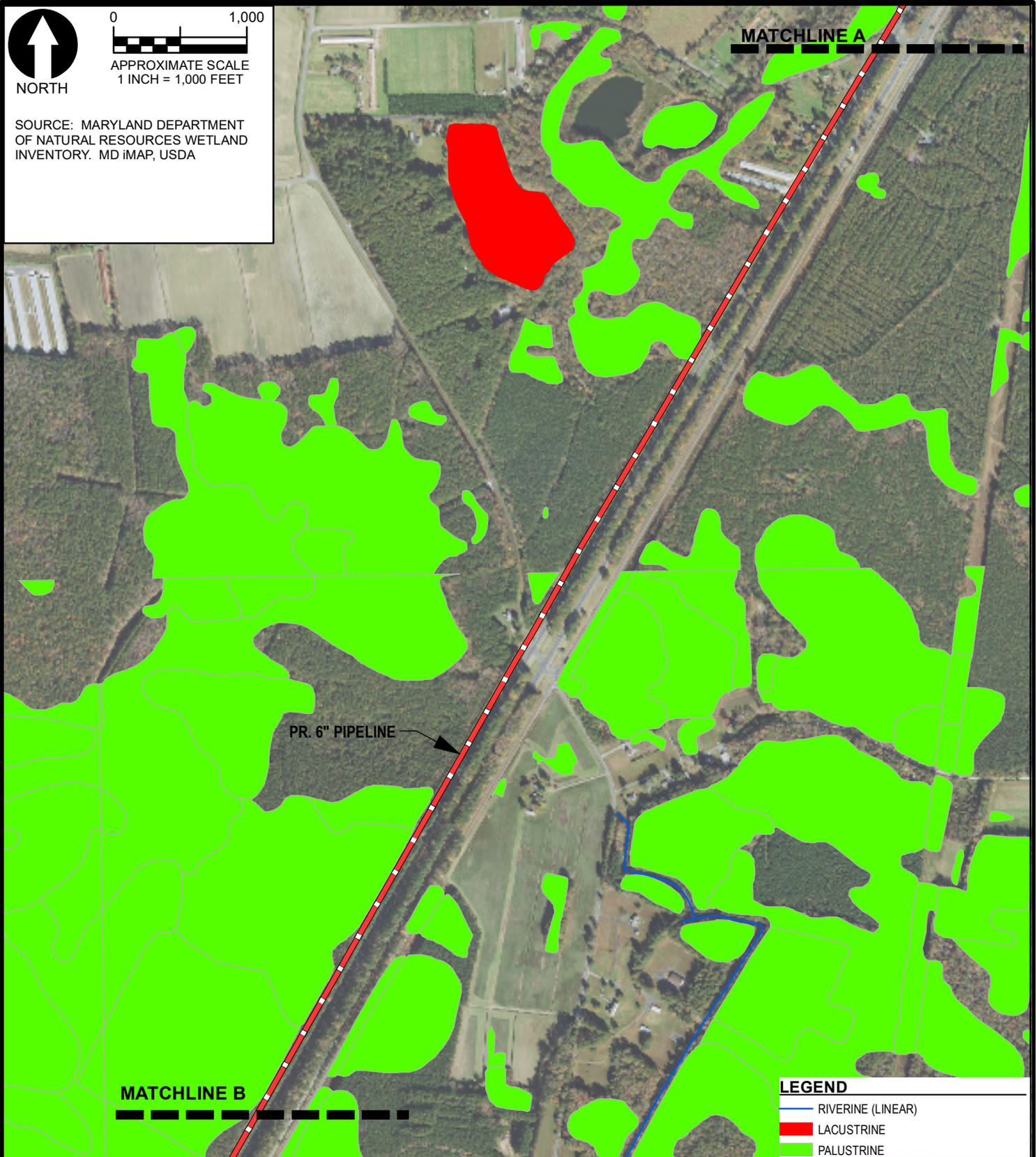
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APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: MARYLAND DEPARTMENT
OF NATURAL RESOURCES WETLAND
INVENTORY. MD iMAP, USDA



MATCHLINE A

PR. 6" PIPELINE

MATCHLINE B

LEGEND

-  RIVERINE (LINEAR)
-  LACUSTRINE
-  PALUSTRINE



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APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: MARYLAND DEPARTMENT
OF NATURAL RESOURCES WETLAND
INVENTORY. MD iMAP, USDA

MATCHLINE B



PR. 6" PIPELINE



MATCHLINE C



LEGEND

-  RIVERINE (LINEAR)
-  WETLAND OF SPECIAL STATE CONCERN
-  PALUSTRINE



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1 INCH = 1,000 FEET

SOURCE: MARYLAND DEPARTMENT
OF NATURAL RESOURCES WETLAND
INVENTORY. MD iMAP, USDA

MATCHLINE C

PR. 6" PIPELINE

MATCHLINE D

LEGEND

-  RIVERINE (LINEAR)
-  WETLAND OF SPECIAL STATE CONCERN
-  ESTUARINE
-  PALUSTRINE



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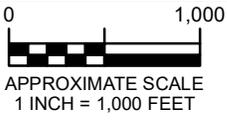
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SOURCE: MARYLAND DEPARTMENT OF NATURAL RESOURCES WETLAND INVENTORY. MD iMAP, USDA

MATCHLINE D

PR. 6" PIPELINE

MATCHLINE E

LEGEND

-  ESTUARINE (LINEAR)
-  WETLAND OF SPECIAL STATE CONCERN
-  ESTUARINE
-  PALUSTRINE



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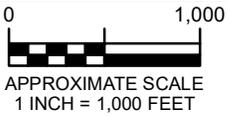
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**MD DNR WETLANDS MAP
 SOMERSET COUNTY
 EXPANSION PROJECT**

SOMERSET COUNTY, MARYLAND

JOB NO.	31191824	SCALE:	1" = 1,000'	DATE:	MARCH 24, 2020	DRAWN BY:	MAJ	REVIEW BY:	TAS	FIGURE:	4E
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APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: MARYLAND DEPARTMENT
OF NATURAL RESOURCES WETLAND
INVENTORY. MD iMAP, USDA

MATCHLINE E

PR. 6" PIPELINE

LEGEND

-  ESTUARINE (LINEAR)
-  PALUSTRINE (LINEAR)
-  RIVERINE (LINEAR)
-  WETLAND OF SPECIAL STATE CONCERN
-  ESTUARINE
-  PALUSTRINE



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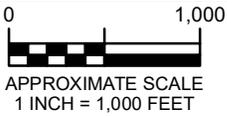
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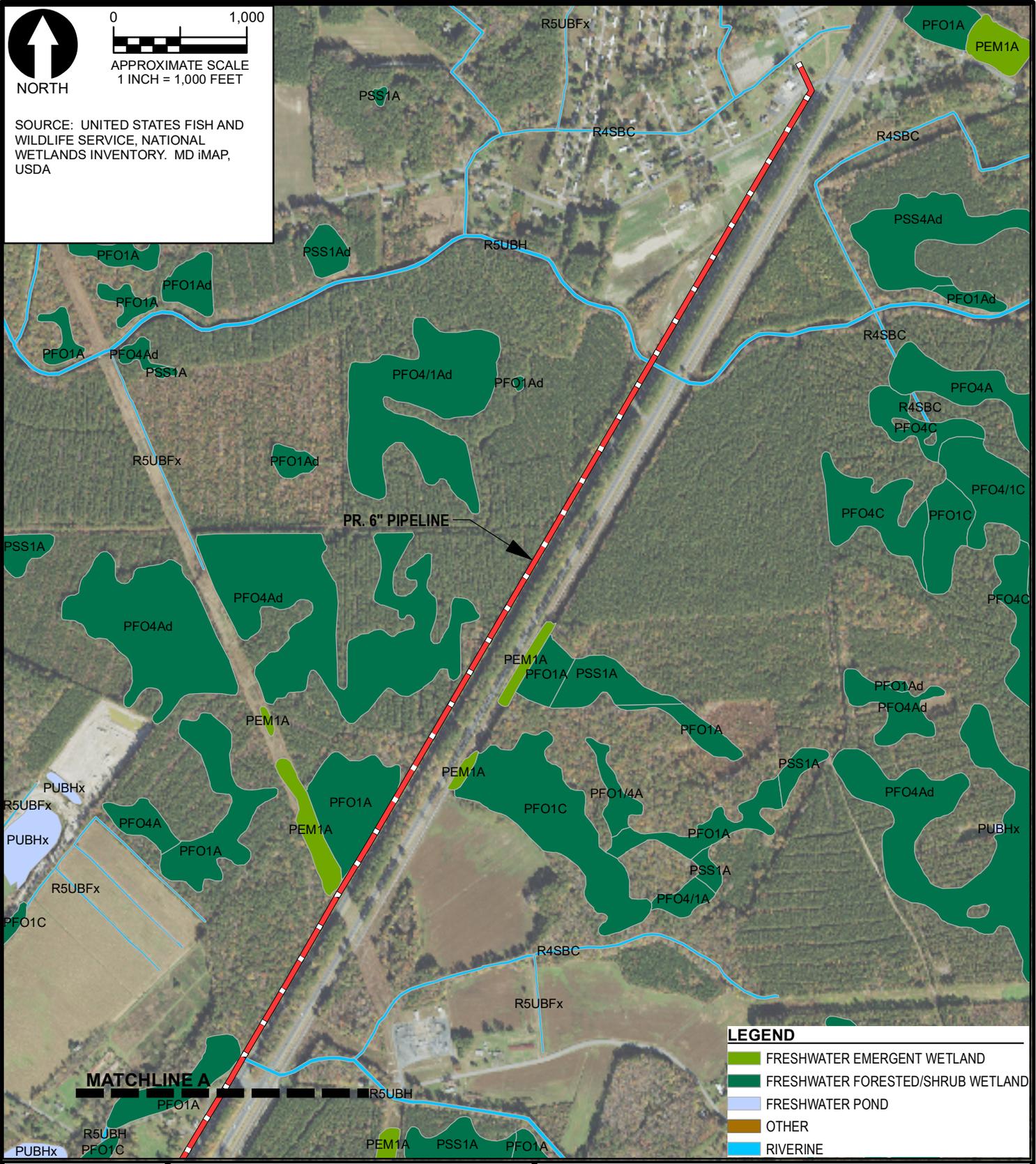
MD DNR WETLANDS MAP SOMERSET COUNTY EXPANSION PROJECT

SOMERSET COUNTY, MARYLAND

JOB NO.	31191824	SCALE:	1" = 1,000'	DATE:	MARCH 24, 2020	DRAWN BY:	MAJ	REVIEW BY:	TAS	FIGURE:	4F
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SOURCE: UNITED STATES FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY. MD iMAP, USDA



LEGEND	
	FRESHWATER EMERGENT WETLAND
	FRESHWATER FORESTED/SHRUB WETLAND
	FRESHWATER POND
	OTHER
	RIVERINE



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SOMERSET COUNTY, MARYLAND

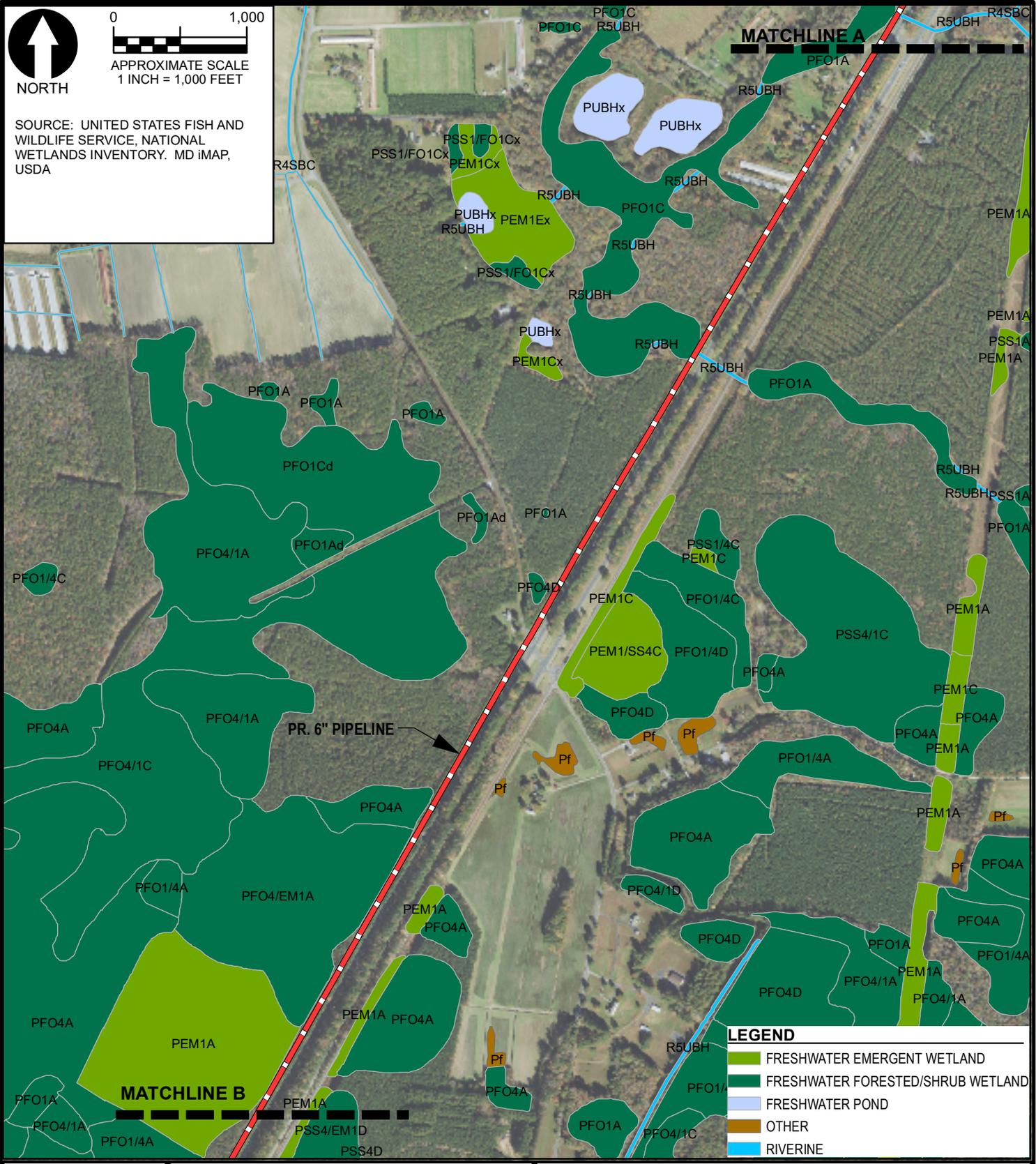
JOB NO.	31191824	SCALE:	1" = 1,000'	DATE:	MARCH 24, 2020	DRAWN BY:	MAJ	REVIEW BY:	TAS	FIGURE:	5A
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0 1,000

APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: UNITED STATES FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY. MD iMAP, USDA



LEGEND	
	FRESHWATER EMERGENT WETLAND
	FRESHWATER FORESTED/SHRUB WETLAND
	FRESHWATER POND
	OTHER
	RIVERINE



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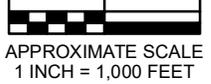
SOMERSET COUNTY, MARYLAND

JOB NO.	31191824	SCALE:	1" = 1,000'	DATE:	MARCH 24, 2020	DRAWN BY:	MAJ	REVIEW BY:	TAS	FIGURE:	5B
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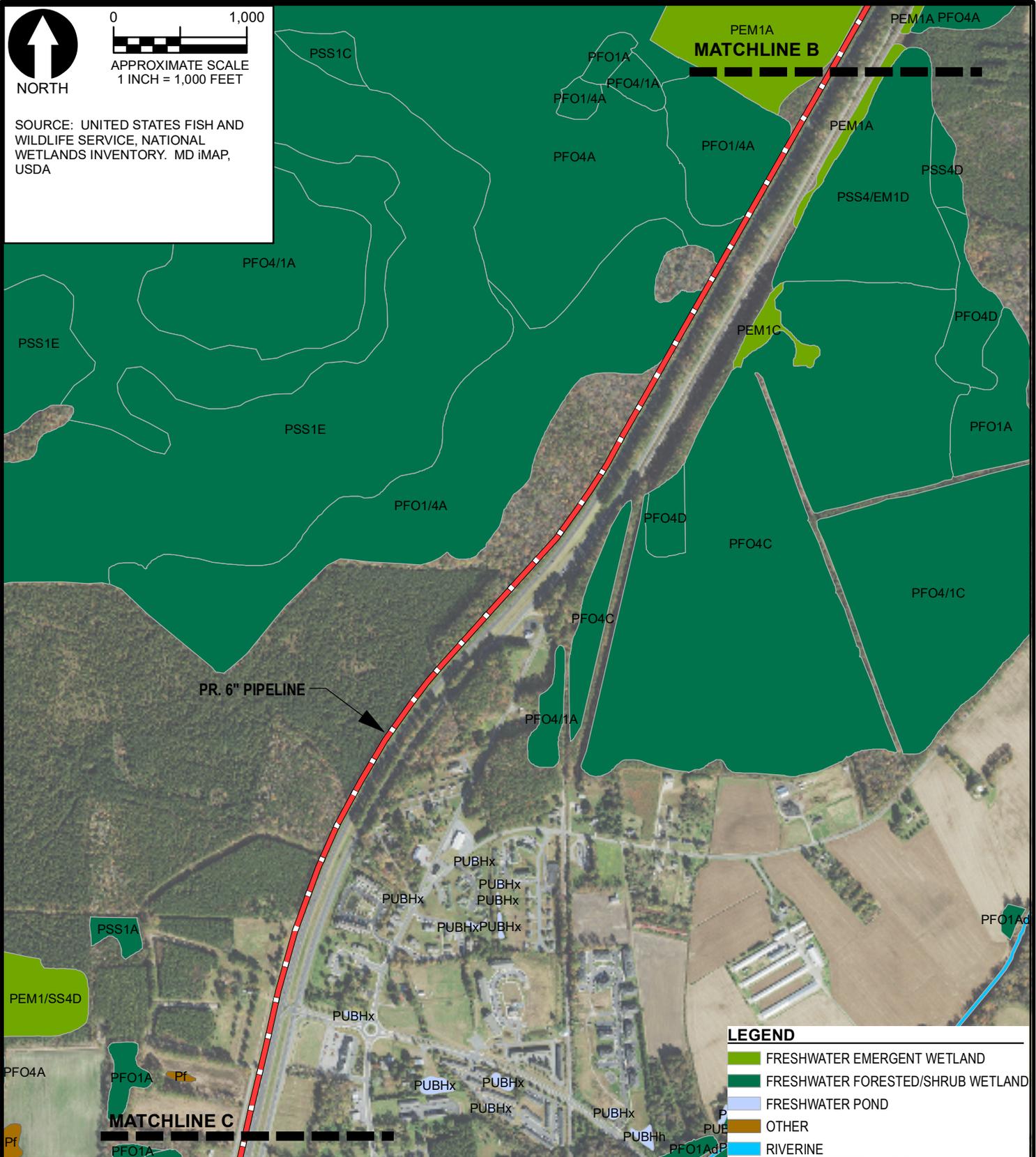
NORTH

0 1,000



APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: UNITED STATES FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY. MD iMAP, USDA



LEGEND

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- OTHER
- RIVERINE



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SOMERSET COUNTY, MARYLAND

JOB NO. 31191824	SCALE: 1" = 1,000'	DATE: MARCH 24, 2020	DRAWN BY: MAJ	REVIEW BY: TAS	FIGURE: 5C
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NORTH

0 1,000

APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: UNITED STATES FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY. MD iMAP, USDA

MATCHLINE C

MATCHLINE D

PR. 6" PIPELINE

LEGEND

- ESTUARINE AND MARINE DEEPWATER
- ESTUARINE AND MARINE WETLAND
- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- OTHER
- RIVERINE



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SOMERSET COUNTY, MARYLAND

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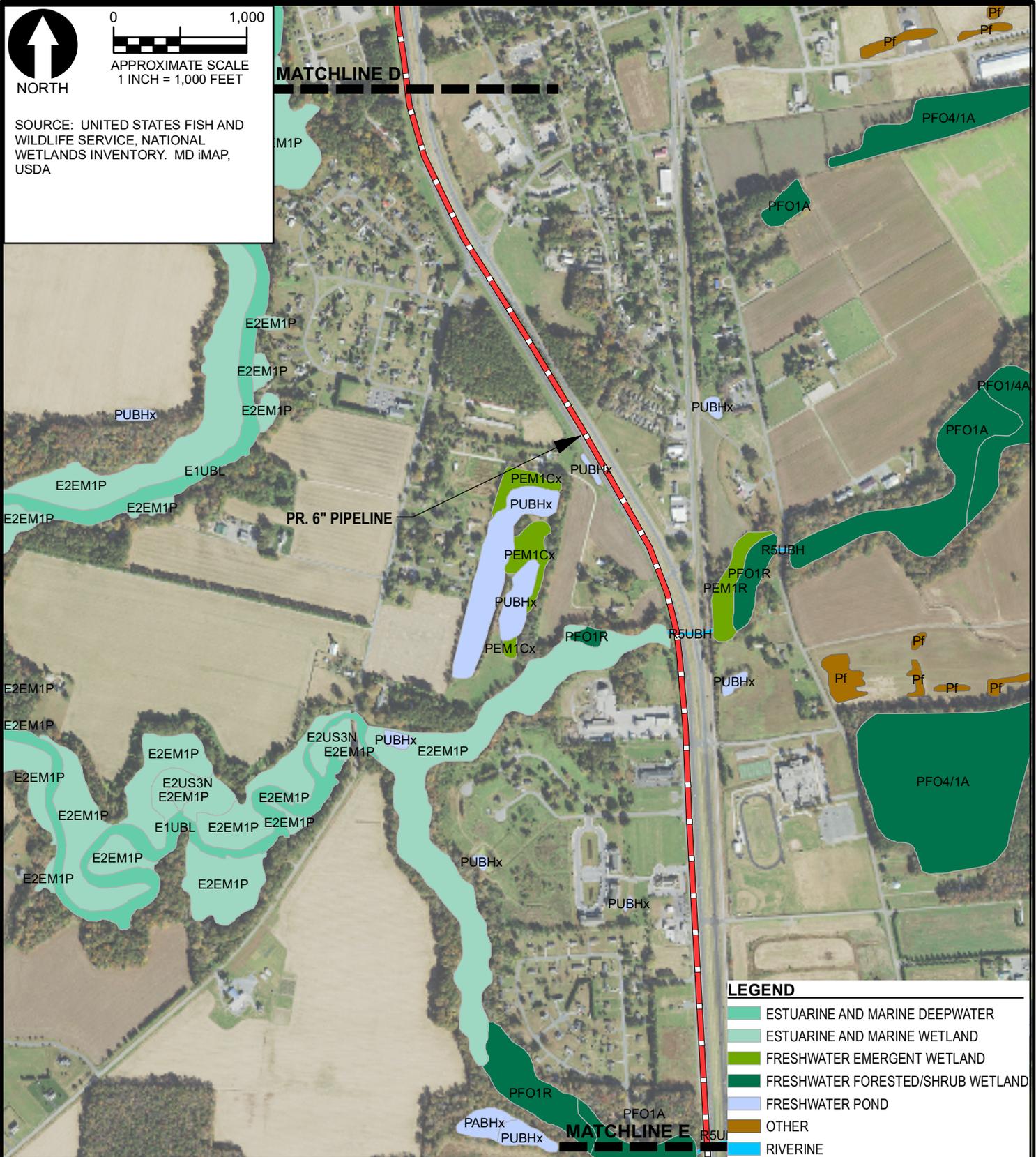
NORTH

0 1,000

APPROXIMATE SCALE
1 INCH = 1,000 FEET

SOURCE: UNITED STATES FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY. MD iMAP, USDA

MATCHLINE D



PR. 6" PIPELINE

LEGEND

- ESTUARINE AND MARINE DEEPWATER
- ESTUARINE AND MARINE WETLAND
- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- OTHER
- RIVERINE

MATCHLINE E



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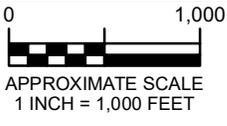
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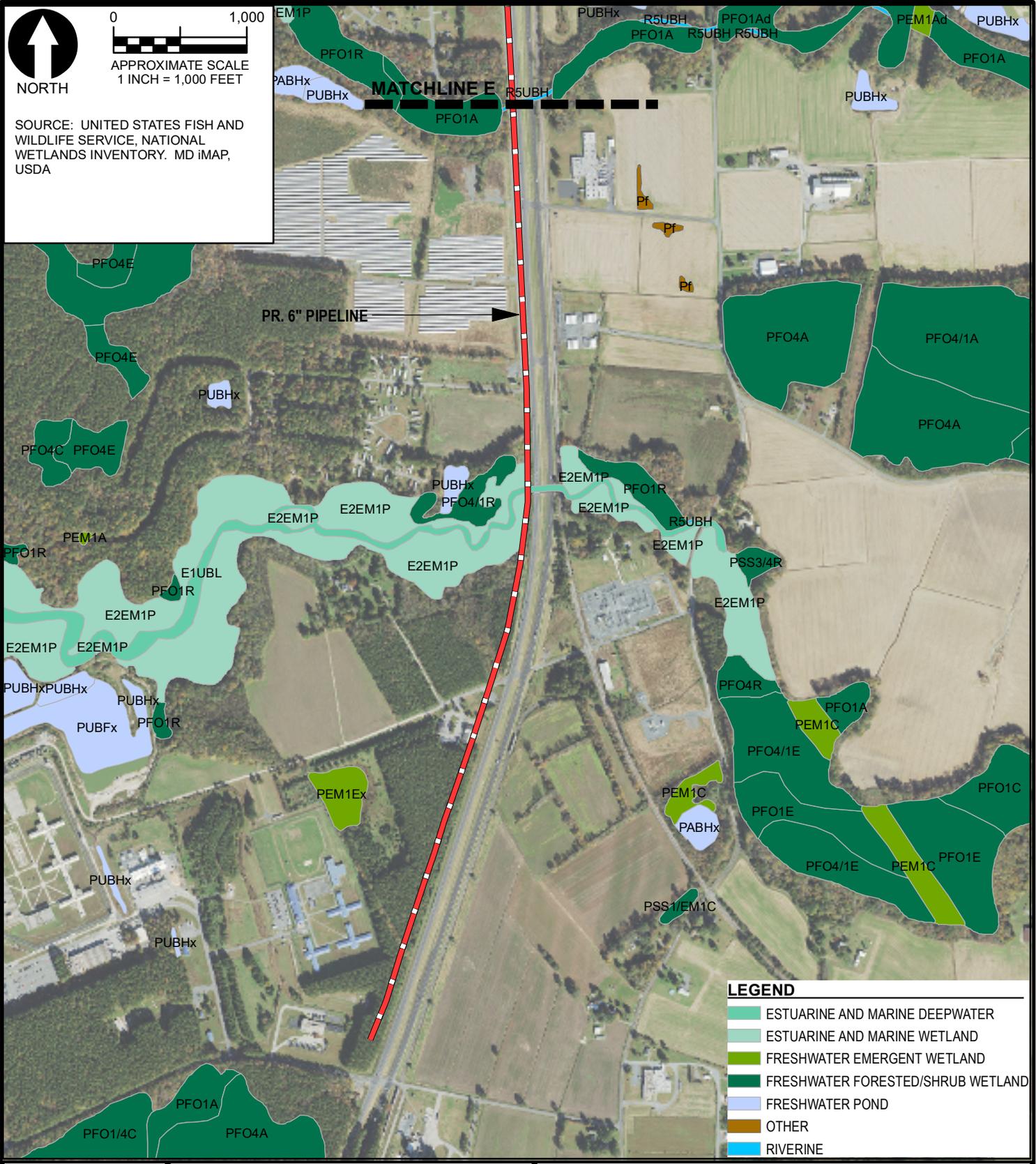
NWI WETLANDS MAP SOMERSET COUNTY EXPANSION PROJECT

SOMERSET COUNTY, MARYLAND

JOB NO.	31191824	SCALE:	1" = 1,000'	DATE:	MARCH 24, 2020	DRAWN BY:	MAJ	REVIEW BY:	TAS	FIGURE:	5E
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SOURCE: UNITED STATES FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY. MD iMAP, USDA



LEGEND	
	ESTUARINE AND MARINE DEEPWATER
	ESTUARINE AND MARINE WETLAND
	FRESHWATER EMERGENT WETLAND
	FRESHWATER FORESTED/SHRUB WETLAND
	FRESHWATER POND
	OTHER
	RIVERINE



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JOB NO.	31191824	SCALE:	1" = 1,000'	DATE:	MARCH 24, 2020	DRAWN BY:	MAJ	REVIEW BY:	TAS	FIGURE:	5F
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APPENDIX B

DATA FORMS

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 22-Jan-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-1
 Investigator(s): J. Weber & M. Hunter-Goskie Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LLR or MLRA): MLRA153D Lat: 38.28035° Long: -75.65177° Datum: NAD83
 Soil Map Unit Name: Urban Land NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		
Remarks: <u>The DCP was established on the western side of U.S. Route 13, near the northern portion of the project area.</u>			

HYDROLOGY

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
Primary Indicators (minimum of one is required, check all that apply)			
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Dry-Season Water Table (C2)	<u> </u> Crayfish Burrows (C8)
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Saturation Visible on Aerial Imagery (C9)	<u> </u> Geomorphic Position (D2)
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Shallow Aquitard (D3)	<u> </u> FAC-Neutral Test (D5)
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Sphagnum moss (D*) (LRR T, U)	
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)		
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)		
<u> </u> Inundation Visible on Aerial Imagery (B7)			
<u> </u> Water Stained Leaves (B9)			
Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
Saturation Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
(includes capillary fringe)			
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		
Herb Stratum	(Plot size: 30' Radius)			
1.	<i>Grass spp. *</i>	60	Y	FAC
2.	<i>Glechoma hederacea</i>	35	Y	FACU
3.	<i>Solanum carolinense</i>	15	N	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		110 = Total Cover		
50% of total cover: 55		20% of total cover: 22		
Woody Vine Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet).
 *The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 23-Jan-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-2
 Investigator(s): J. Weber & M. Hunter-Goskie Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LLR or MLRA): MLRA153D Lat: 38.27555° Long: -75.65549° Datum: NAD83
 Soil Map Unit Name: Fallsington loams, 0-2% slopes, Northern Tidewater Area NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: The DCP was established south of Waters A, flag 103.	

HYDROLOGY

<p>Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><u> </u> Surface Water (A1)</td> <td style="width:50%; border: none;"><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td style="border: none;"><u> </u> High Water Table (A2)</td> <td style="border: none;"><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td style="border: none;"><u> </u> Saturation (A3)</td> <td style="border: none;"><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><u> </u> Water Marks (B1)</td> <td style="border: none;"><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><u> </u> Sediment Deposits (B2)</td> <td style="border: none;"><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><u> </u> Drift Deposits (B3)</td> <td style="border: none;"><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><u> </u> Algal Mat or Crust (B4)</td> <td style="border: none;"><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><u> </u> Iron Deposits (B5)</td> <td style="border: none;"><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><u> </u> Water Stained Leaves (B9)</td> <td></td> </tr> </table>	<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water Stained Leaves (B9)		<p><u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum moss (D*) (LRR T, U)</p>
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																				
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																				
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)																				
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)																				
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)																				
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)																				
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)																				
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)																				
<u> </u> Inundation Visible on Aerial Imagery (B7)																					
<u> </u> Water Stained Leaves (B9)																					
<p>Field Observations:</p> Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>																				
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:																					
Remarks:																					

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Pinus taeda</i>		20	Y	FAC
2. <i>Liquidambar styraciflua</i>		15	Y	FAC
3. <i>Acer rubrum</i>		5	N	FAC
4. _____				
5. _____				
6. _____				
7. _____				
		40 = Total Cover		
50% of total cover: 20		20% of total cover: 8		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1. <i>Acer rubrum</i>		5	Y	FAC
2. <i>Liquidambar styraciflua</i>		5	Y	FAC
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
		10 = Total Cover		
50% of total cover: 5		20% of total cover: 2		
Herb Stratum	(Plot size: 30' Radius)			
1. <i>Grass spp. *</i>		55	Y	FAC
2. <i>Rosa multiflora</i>		15	N	FACU
3. <i>Lonicera japonica</i>		10	N	FACU
4. <i>Andropogon virginicus</i>		10	N	FAC
5. <i>Smilax rotundifolia</i>		5	N	FAC
6. <i>Solanum carolinense</i>		5	N	FACU
7. <i>Plantago lanceolata</i>		1	N	FACU
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
		101 = Total Cover		
50% of total cover: 50.5		20% of total cover: 20.2		
Woody Vine Stratum	(Plot size: 30' Radius)			
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

_____ 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

_____ 3 - Prevalence Index is ≤3.0¹

_____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet).

*The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	85	5YR 5/6	15	C	M	silt loam	
6-20	10YR 4/1	80	5YR 5/6	20	C	M	clay loam	

¹Type: C=concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	
	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
	<input type="checkbox"/> Red Parent Material (TF2)
	<input type="checkbox"/> Very Shallow Dark Surface (TF12) (LRR T, U)
	<input type="checkbox"/> Other (Explain in Remarks)
	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 23-Jan-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-3
 Investigator(s): J. Weber & M. Hunter-Goskie Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LLR or MLRA): MLRA153D Lat: 38.26147° Long: -75.66635° Datum: NAD83
 Soil Map Unit Name: Longmarsh and Indiantown soils, frequently flooded NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u> X </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> X </u>
Remarks: The DCP was established north of Waters B, flag 102.	

HYDROLOGY

<p>Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><u> </u> Surface Water (A1)</td> <td style="width:50%; border: none;"><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td style="border: none;"><u> </u> High Water Table (A2)</td> <td style="border: none;"><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td style="border: none;"><u> </u> Saturation (A3)</td> <td style="border: none;"><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><u> </u> Water Marks (B1)</td> <td style="border: none;"><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><u> </u> Sediment Deposits (B2)</td> <td style="border: none;"><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><u> </u> Drift Deposits (B3)</td> <td style="border: none;"><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><u> </u> Algal Mat or Crust (B4)</td> <td style="border: none;"><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><u> </u> Iron Deposits (B5)</td> <td style="border: none;"><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><u> </u> Water Stained Leaves (B9)</td> <td></td> </tr> </table>	<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water Stained Leaves (B9)		<p><u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum moss (D*) (LRR T, U)</p>
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																				
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																				
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)																				
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)																				
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)																				
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)																				
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<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)																				
<u> </u> Inundation Visible on Aerial Imagery (B7)																					
<u> </u> Water Stained Leaves (B9)																					
<p>Field Observations:</p> Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>																				
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:																					
Remarks:																					

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Pinus taeda</i>		20	Y	FAC
2. <i>Liquidambar styraciflua</i>		15	Y	FAC
3. <i>Acer rubrum</i>		5	N	FAC
4.				
5.				
6.				
7.				
		40 = Total Cover		
50% of total cover: 20		20% of total cover: 8		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1. <i>Acer rubrum</i>		5	Y	FAC
2. <i>Liquidambar styraciflua</i>		5	Y	FAC
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		10 = Total Cover		
50% of total cover: 5		20% of total cover: 2		
Herb Stratum	(Plot size: 30' Radius)			
1. <i>Grass spp. *</i>		55	Y	FAC
2. <i>Rosa multiflora</i>		15	N	FACU
3. <i>Lonicera japonica</i>		10	N	FACU
4. <i>Andropogon virginicus</i>		10	N	FAC
5. <i>Smilax rotundifolia</i>		5	N	FAC
6. <i>Solanum carolinense</i>		5	N	FACU
7. <i>Plantago lanceolata</i>		1	N	FACU
8.				
9.				
10.				
11.				
12.				
		101 = Total Cover		
50% of total cover: 50.5		20% of total cover: 20.2		
Woody Vine Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet).
 *The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	85	5YR 5/6	15	C	M	silt loam	
6-20	10YR 4/1	80	5YR 5/6	20	C	M	clay loam	

¹Type: C=concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 23-Jan-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-4
 Investigator(s): J. Weber & M. Hunter-Goskie Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LLR or MLRA): MLRA153D Lat: 38.25460° Long: -75.67172° Datum: NAD83
 Soil Map Unit Name: Longmarsh and Indiantown soils, frequently flooded NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: <u>The DCP was established north of Waters C, flag 102.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><u> </u> Surface Water (A1)</td> <td style="width:50%; border: none;"><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td style="border: none;"><u> </u> High Water Table (A2)</td> <td style="border: none;"><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td style="border: none;"><u> </u> Saturation (A3)</td> <td style="border: none;"><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><u> </u> Water Marks (B1)</td> <td style="border: none;"><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><u> </u> Sediment Deposits (B2)</td> <td style="border: none;"><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><u> </u> Drift Deposits (B3)</td> <td style="border: none;"><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><u> </u> Algal Mat or Crust (B4)</td> <td style="border: none;"><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><u> </u> Iron Deposits (B5)</td> <td style="border: none;"><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"><u> </u> Water Stained Leaves (B9)</td> <td style="border: none;"></td> </tr> </table>	<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water Stained Leaves (B9)		Secondary Indicators (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum moss (D*) (LRR T, U)
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																				
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																				
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)																				
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)																				
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<u> </u> Inundation Visible on Aerial Imagery (B7)																					
<u> </u> Water Stained Leaves (B9)																					
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>																				
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:																					
Remarks:																					

Tree Stratum	(Plot size: <u>30'</u> Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>		<u>35</u>	<u>Y</u>	<u>FAC</u>
2. <u>Acer rubrum</u>		<u>20</u>	<u>Y</u>	<u>FAC</u>
3. <u>Pinus taeda</u>		<u>5</u>	<u>N</u>	<u>FAC</u>
4. <u>Ilex opaca</u>		<u>5</u>	<u>N</u>	<u>FAC</u>
5. _____				
6. _____				
7. _____				
		<u>65</u> = Total Cover		
	50% of total cover: <u>32.5</u>		20% of total cover: <u>13</u>	
Sapling / Shrub Stratum	(Plot size: <u>30'</u> Radius)			
1. <u>Acer rubrum</u>		<u>10</u>	<u>Y</u>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>		<u>5</u>	<u>Y</u>	<u>FAC</u>
3. <u>Ilex opaca</u>		<u>3</u>	<u>N</u>	<u>FAC</u>
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
		<u>18</u> = Total Cover		
	50% of total cover: <u>9</u>		20% of total cover: <u>3.6</u>	
Herb Stratum	(Plot size: <u>30'</u> Radius)			
1. <u>Smilax rotundifolia</u>		<u>20</u>	<u>Y</u>	<u>FAC</u>
2. <u>Lonicera japonica</u>		<u>15</u>	<u>Y</u>	<u>FACU</u>
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
		<u>35</u> = Total Cover		
	50% of total cover: <u>17.5</u>		20% of total cover: <u>7</u>	
Woody Vine Stratum	(Plot size: <u>30'</u> Radius)			
1. <u>Hedera helix</u>		<u>2</u>	<u>Y</u>	<u>FACU</u>
2. _____				
3. _____				
4. _____				
5. _____				
		<u>2</u> = Total Cover		
	50% of total cover: <u>1</u>		20% of total cover: <u>0.4</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet).

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-5
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LLR or MLRA): MLRA153D Lat: 38.20155° Long: -75.69843° Datum: NAD83
 Soil Map Unit Name: Nanticoke and Mannington soils, very frequently flooded, tidal NWI classification: EEM/PEM
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: <u>The DCP was established adjacent to Wetland 2, flag 115.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D*) (LRR T, U)	
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Taxodium distichum</i>	15	Y	OBL
2.				
3.				
4.				
5.				
6.				
7.				
		15 = Total Cover		
50% of total cover: 7.5		20% of total cover: 3		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1.	<i>Hibiscus moscheutos</i>	5	Y	OBL
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		5 = Total Cover		
50% of total cover: 2.5		20% of total cover: 1		
Herb Stratum	(Plot size: 30' Radius)			
1.	<i>Polygonum pensylvanicum</i>	25	Y	FACW
2.	<i>Grass spp.*</i>	15	Y	FAC
3.	<i>Typha angustifolia</i>	2	N	OBL
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		42 = Total Cover		
50% of total cover: 21		20% of total cover: 8.4		
Woody Vine Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet).

*The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/1	100					muck	
2-20	10YR 3/2	100					silt loam	

¹Type: C=concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input checked="" type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: _____	
Depth (inches): _____	

Remarks:

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-6
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
 Subregion (LLR or MLRA): MLRA153D Lat: 38.20106° Long: -75.69824° Datum: NAD83
 Soil Map Unit Name: Ingleside-Runclint complex, 5-10 percent slopes NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>The DCP was established upslope of Wetland 2, flag 116.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one is required, check all that apply)</u>			
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> Surface Soil Cracks (B6)	
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Sparsely Vegetated Concave Surface (B8)	
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Drainage Patterns (B10)	
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Moss Trim Lines (B16)	
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Dry-Season Water Table (C2)	
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Crayfish Burrows (C8)	
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Saturation Visible on Aerial Imagery (C9)	
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Geomorphic Position (D2)	
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Shallow Aquitard (D3)	
<u> </u> Water Stained Leaves (B9)		<u> </u> FAC-Neutral Test (D5)	
		<u> </u> Sphagnum moss (D*) (LRR T, U)	
Field Observations:		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
Saturation Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>		
(includes capillary fringe)			
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Pinus taeda</i>		15	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
		15 = Total Cover		
50% of total cover: 7.5		20% of total cover: 3		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		
Herb Stratum	(Plot size: 30' Radius)			
1. <i>Veronica hederifolia</i>		70	Y	UPL
2. <i>Lamium purpureum</i>		8	N	UPL
3. <i>Grass spp.*</i>		5	N	FAC
4. <i>Setaria pumila</i>		2	N	FAC
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		85 = Total Cover		
50% of total cover: 42.5		20% of total cover: 17		
Woody Vine Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet).

*The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-7
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LLR or MLRA): MLRA153D Lat: 38.18702° Long: -75.69239° Datum: NAD83
 Soil Map Unit Name: Queponco silt loam, 0-2 percent slopes NWI classification: PEM
 Are climator/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: <u>The DCP was established adjacent to Wetland 3, flag 103.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D*) (LRR T, U)	
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1 to 4</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum	(Plot size: <u>30' Radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Acer rubrum</i>		15	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
		15 = Total Cover		
50% of total cover: <u>7.5</u>		20% of total cover: <u>3</u>		
Sapling / Shrub Stratum	(Plot size: <u>30' Radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Liquidambar styraciflua</i>		8	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		8 = Total Cover		
50% of total cover: <u>4</u>		20% of total cover: <u>1.6</u>		
Herb Stratum	(Plot size: <u>30' Radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Phragmites australis</i>		35	Y	FACW
2. <i>Juncus effusus</i>		20	Y	OBL
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		55 = Total Cover		
50% of total cover: <u>27.5</u>		20% of total cover: <u>11</u>		
Woody Vine Stratum	(Plot size: <u>30' Radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet).

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/2	100					sandy loam	
5-20	10YR 5/2	90	10YR 5/6	10	C	M	sandy loam	

¹Type: C=concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-8
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LLR or MLRA): MLRA153D Lat: 38.18699° Long: -75.69230° Datum: NAD83
 Soil Map Unit Name: Queponco silt loam, 0-2 percent slopes NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: The DCP was established south of Wetland 3, flag 102.	

HYDROLOGY

<p>Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><u> </u> Surface Water (A1)</td> <td style="width:50%; border: none;"><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td style="border: none;"><u> </u> High Water Table (A2)</td> <td style="border: none;"><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td style="border: none;"><u> </u> Saturation (A3)</td> <td style="border: none;"><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><u> </u> Water Marks (B1)</td> <td style="border: none;"><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><u> </u> Sediment Deposits (B2)</td> <td style="border: none;"><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><u> </u> Drift Deposits (B3)</td> <td style="border: none;"><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><u> </u> Algal Mat or Crust (B4)</td> <td style="border: none;"><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><u> </u> Iron Deposits (B5)</td> <td style="border: none;"><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"><u> </u> Water Stained Leaves (B9)</td> <td style="border: none;"></td> </tr> </table>	<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water Stained Leaves (B9)		<p><u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum moss (D*) (LRR T, U)</p>
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																				
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																				
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)																				
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)																				
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)																				
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)																				
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)																				
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)																				
<u> </u> Inundation Visible on Aerial Imagery (B7)																					
<u> </u> Water Stained Leaves (B9)																					
<p>Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)</p>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>																				
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:																					
Remarks:																					

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		
Herb Stratum	(Plot size: 30' Radius)			
1. <i>Grass spp.*</i>		40	Y	FAC
2. <i>Veronica hederifolia</i>		20	Y	UPL
3. <i>Allium vineale</i>		15	N	FACU
4. <i>Lamium purpureum</i>		8	N	UPL
5. <i>Geranium carolinianum</i>		5	N	UPL
6. <i>Solidago altissima</i>		5	N	FACU
7. <i>Andropogon virginicus</i>		1	N	FAC
8.				
9.				
10.				
11.				
12.				
		94 = Total Cover		
50% of total cover: 47		20% of total cover: 18.8		
Woody Vine Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet).

*The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 3/2	70	10YR 6/6	30	C	M	sandy loam	
9-20	10YR 6/4	70	10YR 5/3	25	D	M	sandy loam	
			7.5YR 5/6	5	C	M		

¹Type: C=concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12) **(LRR T, U)**
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-9
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LLR or MLRA): MLRA153D Lat: 38.18420° Long: -75.69077° Datum: NAD83
 Soil Map Unit Name: Transquaking and Mispillion soils, very frequently flooded, tidal NWI classification: EEM/PEM
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: <u>The DCP was established adjacent to Wetland 4, flag 102.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D*) (LRR T, U)	
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0 = Total Cover		
		50% of total cover: 0	20% of total cover: 0	
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1.	<i>Acer rubrum</i>	10	Y	FAC
2.	<i>Acer negundo</i>	5	Y	FAC
3.	<i>Cornus sericea</i>	5	Y	FACW
4.				
5.				
6.				
7.				
8.				
9.				
		20 = Total Cover		
		50% of total cover: 10	20% of total cover: 4	
Herb Stratum	(Plot size: 30' Radius)			
1.	<i>Phragmites australis</i>	70	Y	FACW
2.	<i>Juncus effusus</i>	5	N	OBL
3.	<i>Lonicera japonica</i>	5	N	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		80 = Total Cover		
		50% of total cover: 40	20% of total cover: 16	
Woody Vine Stratum	(Plot size: 30' Radius)			
1.	<i>Lonicera japonica</i>	15	Y	FACU
2.				
3.				
4.				
5.				
		15 = Total Cover		
		50% of total cover: 7.5	20% of total cover: 3	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet).

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 4/2	90	5YR 5/6	10	C	PL	sandy loam	
5-20	10YR 5/2	75	5YR 5/6	25	C	M	sandy loam	

¹Type: C=concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-10
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5
 Subregion (LLR or MLRA): MLRA153D Lat: 38.18421° Long: -75.69060° Datum: NAD83
 Soil Map Unit Name: Transquaking and Mispillion soils, very frequently flooded, tidal NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: <u>The DCP was established upslope from Wetland 4, flag 103.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><u> </u> Surface Water (A1)</td> <td style="width:50%; border: none;"><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td style="border: none;"><u> </u> High Water Table (A2)</td> <td style="border: none;"><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td style="border: none;"><u> </u> Saturation (A3)</td> <td style="border: none;"><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><u> </u> Water Marks (B1)</td> <td style="border: none;"><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><u> </u> Sediment Deposits (B2)</td> <td style="border: none;"><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><u> </u> Drift Deposits (B3)</td> <td style="border: none;"><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><u> </u> Algal Mat or Crust (B4)</td> <td style="border: none;"><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><u> </u> Iron Deposits (B5)</td> <td style="border: none;"><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><u> </u> Water Stained Leaves (B9)</td> <td></td> </tr> </table>	<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water Stained Leaves (B9)		Secondary Indicators (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum moss (D*) (LRR T, U)
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																				
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																				
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)																				
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)																				
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)																				
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)																				
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)																				
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)																				
<u> </u> Inundation Visible on Aerial Imagery (B7)																					
<u> </u> Water Stained Leaves (B9)																					
Field Observations: Surface Water Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>																				
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:																					
Remarks:																					

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		
Herb Stratum	(Plot size: 30' Radius)			
1.	<i>Grass spp.*</i>	60	Y	FAC
2.	<i>Allium vineale</i>	8	N	FACU
3.	<i>Phragmites australis</i>	7	N	FACW
4.	<i>Glechoma hederacea</i>	4	N	FACU
5.	<i>Plantago lanceolata</i>	2	N	FACU
6.	<i>Ranunculus bulbosus</i>	1	N	FAC
7.				
8.				
9.				
10.				
11.				
12.				
		82 = Total Cover		
50% of total cover: 41		20% of total cover: 16.4		
Woody Vine Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet).

*The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-11
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LLR or MLRA): MLRA153D Lat: 38.16457° Long: -75.68973° Datum: NAD83
 Soil Map Unit Name: Transquaking and Mispillion soils, very frequently flooded, tidal NWI classification: EEM/PFO/PEM
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: <u>The DCP was established adjacent to Wetland 5, flag 101.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D*) (LRR T, U)	
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u><1</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum	(Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Acer rubrum</i>		50	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
		50 = Total Cover		
50% of total cover: 25		20% of total cover: 10		
Sapling / Shrub Stratum	(Plot size: 30' Radius)			
1. <i>Morella cerifera</i>		20	Y	FAC
2. <i>Salix nigra</i>		4	N	OBL
3. <i>Juniperus virginiana</i>		4	N	FACU
4.				
5.				
6.				
7.				
8.				
9.				
		28 = Total Cover		
50% of total cover: 14		20% of total cover: 5.6		
Herb Stratum	(Plot size: 30' Radius)			
1. <i>Phragmites australis</i>		30	Y	FACW
2. <i>Grass spp.*</i>		10	Y	FAC
3. <i>Ilex opaca</i>		1	N	FAC
4. <i>Morella cerifera</i>		1	N	FAC
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		42 = Total Cover		
50% of total cover: 21		20% of total cover: 8.4		
Woody Vine Stratum	(Plot size: 30' Radius)			
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

_____ 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

_____ 3 - Prevalence Index is ≤3.0¹

_____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet).

*The grass species was unidentifiable due to lack of distinguishing characteristics, therefore an indicator status of FAC is assumed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/1	100					muck	
2-5	10YR 3/2	100					silt loam	
5-20	10YR 6/2	100					sandy loam	

¹Type: C=concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input checked="" type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	
	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
	<input type="checkbox"/> Red Parent Material (TF2)
	<input type="checkbox"/> Very Shallow Dark Surface (TF12) (LRR T, U)
	<input type="checkbox"/> Other (Explain in Remarks)
	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: _____ Depth (inches): _____	

Remarks:

WETLAND DETERMINATION DATA FORM-Atlantic and Gulf Coastal Plain Region

Project/Site: Somerset County Expansion Project City/County: Somerset Sampling Date: 4-Mar-20
 Applicant/Owner: Chesapeake Utilities State: Maryland Sampling Point: DCP-12
 Investigator(s): J.Weber Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
 Subregion (LLR or MLRA): MLRA153D Lat: 38.16484° Long: -75.68951° Datum: NAD83
 Soil Map Unit Name: Transquaking and Mispillion soils, very frequently flooded, tidal NWI classification: N/A
 Are climatic/hydrologic conditions on the site are typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: <u>The DCP was established upslope of Wetland 5, flag 102.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required, check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D*) (LRR T, U)	
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum	(Plot size: <u>30' Radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
Sapling / Shrub Stratum	(Plot size: <u>30' Radius</u>)			
1.	<u>Ligustrum sinense</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2.	<u>Juniperus virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		<u>25</u> = Total Cover		
50% of total cover: <u>12.5</u>		20% of total cover: <u>5</u>		
Herb Stratum	(Plot size: <u>30' Radius</u>)			
1.	<u>Microstegium vimineum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
2.	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3.	<u>Ligustrum sinense</u>	<u>7</u>	<u>N</u>	<u>FAC</u>
4.	<u>Allium vineale</u>	<u>4</u>	<u>N</u>	<u>FACU</u>
5.	<u>Juniperus virginiana</u>	<u>1</u>	<u>N</u>	<u>FACU</u>
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		<u>47</u> = Total Cover		
50% of total cover: <u>23.5</u>		20% of total cover: <u>9.4</u>		
Woody Vine Stratum	(Plot size: <u>30' Radius</u>)			
1.				
2.				
3.				
4.				
5.				
		<u>0</u> = Total Cover		
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

_____ 1 - Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is >50%

_____ 3 - Prevalence Index is ≤3.0¹

_____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling/Shrub - Woody plants, excluding woody vines, a less than 3in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall

Woody vine - All woody vines, greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet).
 Numerous dead shrubs within the sample plot.

APPENDIX C
SITE PHOTOGRAPHS

PROJECT NAME: Somerset County Gas Main Expansion Project

DATE PHOTOGRAPHED: January and March 2020

GTA PROJECT NUMBER: 31191824



PHOTOGRAPH 1: View of Waters A, facing west.



PHOTOGRAPH 2: View of Waters B, facing west.



PHOTOGRAPH 3: View of Waters C, facing west.



PHOTOGRAPH 4: View of Waters D, Manokin River (tidal), facing north.

PROJECT NAME: Somerset County Gas Main Expansion Project

DATE PHOTOGRAPHED: January and March 2020

GTA PROJECT NUMBER: 31191824



PHOTOGRAPH 5: View of Waters E, facing west.



PHOTOGRAPH 6: View of Waters F, facing northwest.



PHOTOGRAPH 7: View of Waters G, Taylor Branch (tidal), facing west.



PHOTOGRAPH 8: View of Waters H, Kings Creek (tidal), facing west.

PROJECT NAME: Somerset County Expansion Project
DATE PHOTOGRAPHED: January and March 2020
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PHOTOGRAPH 9: View of Wetland 1, facing northeast.



PHOTOGRAPH 10: View of Wetland 2, facing north.



PHOTOGRAPH 11: View of Wetland 3, facing northwest.



PHOTOGRAPH 12: View of Wetland 4, facing south.

PROJECT NAME: Somerset County Expansion Project
DATE PHOTOGRAPHED: January and March 2020
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PHOTOGRAPH 13: DCP-1, overview.



PHOTOGRAPH 14: DCP-1, soil sample.



PHOTOGRAPH 15: DCP-2, overview.



PHOTOGRAPH 16: DCP-2, soil sample.

PROJECT NAME: Somerset County Expansion Project
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PHOTOGRAPH 17: DCP-3, overview.



PHOTOGRAPH 18: DCP-3, soil sample.



PHOTOGRAPH 19: DCP-4, overview.



PHOTOGRAPH 20: DCP-4, soil sample.

PROJECT NAME: Somerset County Expansion Project
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PHOTOGRAPH 21: DCP-5, overview.



PHOTOGRAPH 22: DCP-5, soil sample.



PHOTOGRAPH 23: DCP-6, overview.



PHOTOGRAPH 24: DCP-6, soil sample.

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PHOTOGRAPH 25: DCP-7, overview.



PHOTOGRAPH 26: DCP-7, soil sample.



PHOTOGRAPH 27: DCP-8, overview.



PHOTOGRAPH 28: DCP-8, soil sample.

PROJECT NAME: Somerset County Expansion Project
DATE PHOTOGRAPHED: January and March 2020
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PHOTOGRAPH 29: DCP-9, overview.



PHOTOGRAPH 30: DCP-9, soil sample.



PHOTOGRAPH 31: DCP-10, overview.



PHOTOGRAPH 32: DCP-10, soil sample.

PROJECT NAME: Somerset County Gas Project
DATE PHOTOGRAPHED: January and March 2020
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PHOTOGRAPH 33: DCP-11, overview.



PHOTOGRAPH 34: DCP-11, soil sample.



PHOTOGRAPH 35: DCP-12, overview.



PHOTOGRAPH 36: DCP-12, soil sample.

APPENDIX D

WETLAND DELINEATION PLAN

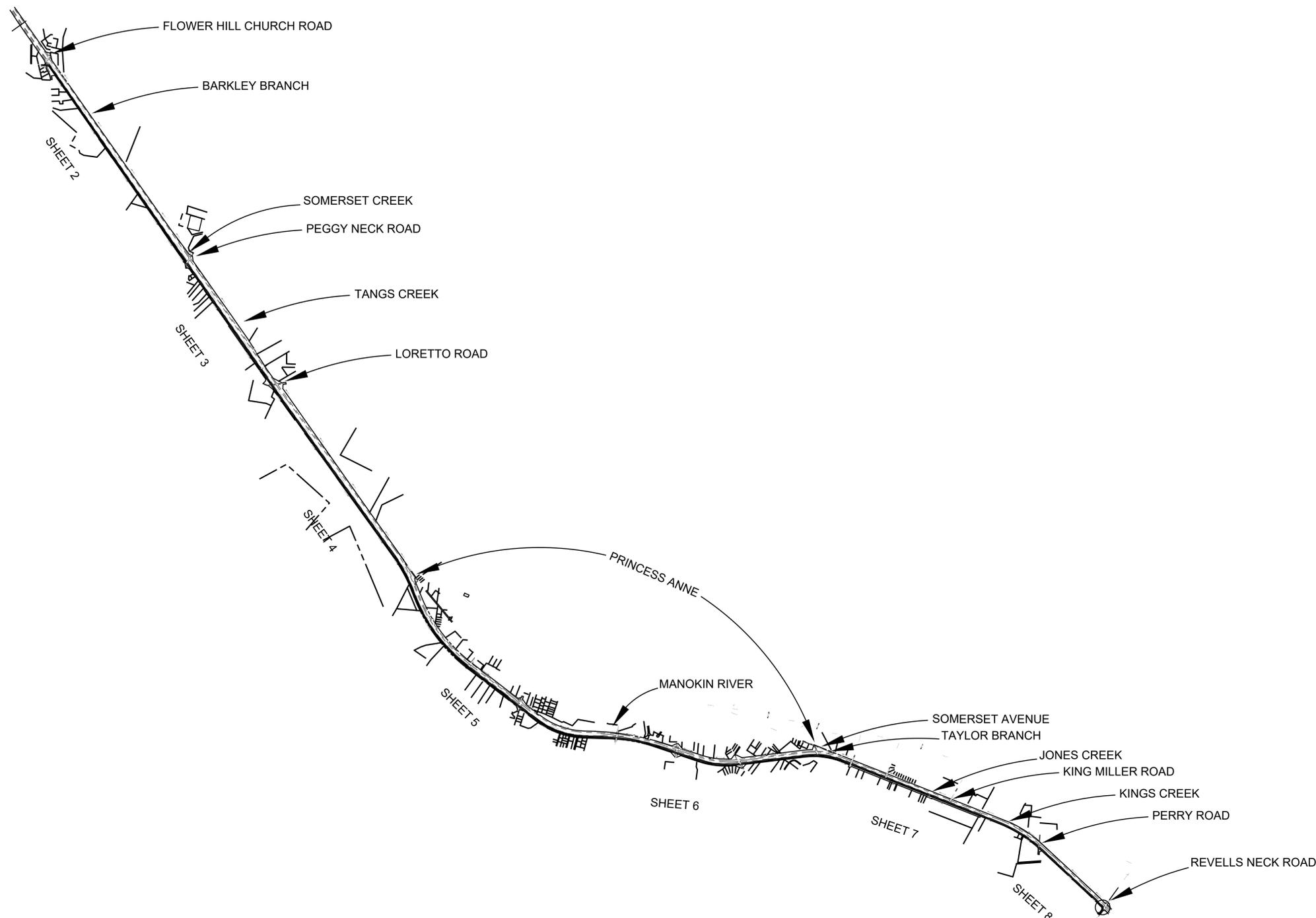
DATE	REVISION	BY

PROJECT DATA:

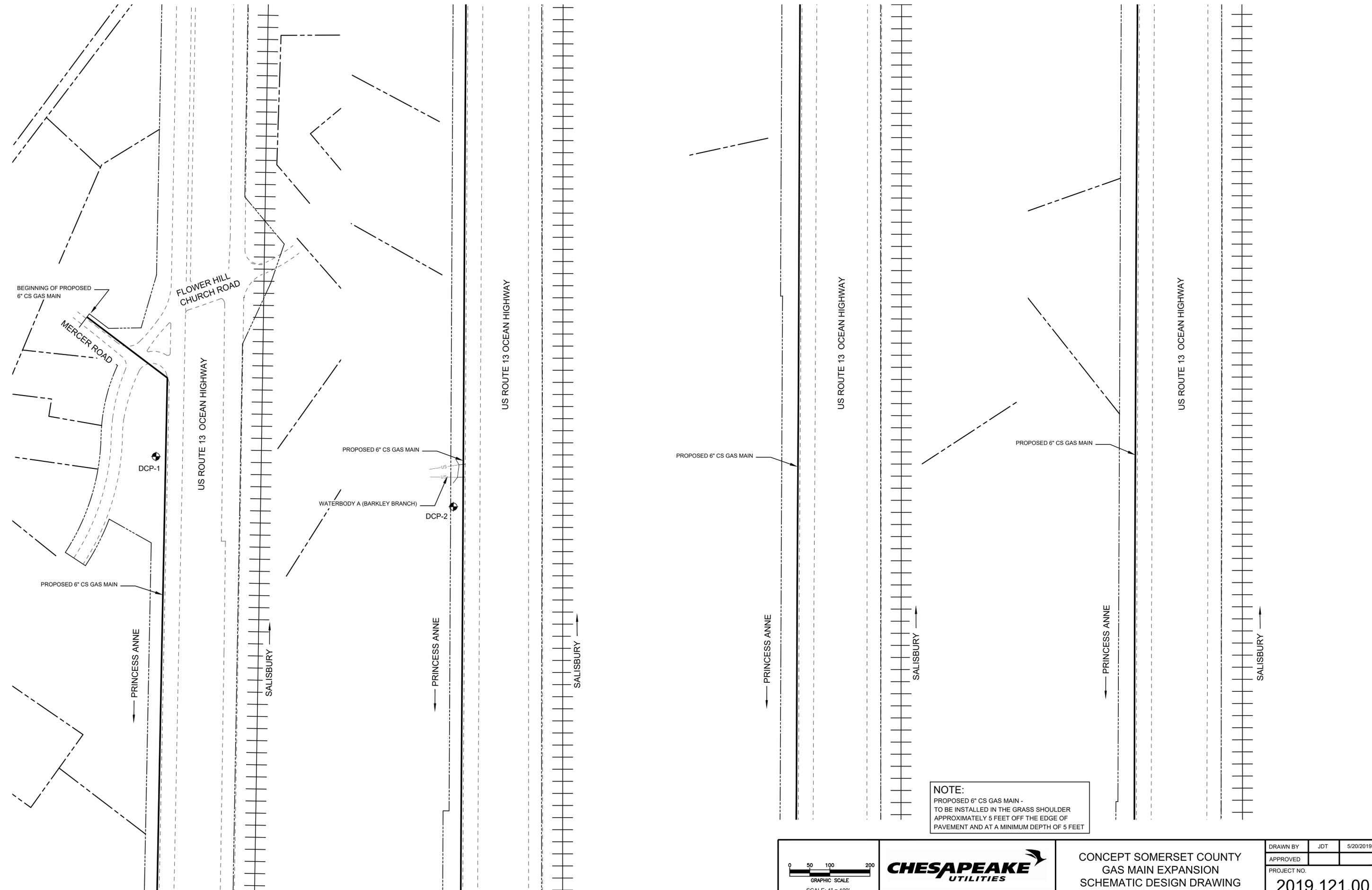
- PROJECT LOCATION:
 CITY: PRINCESS ANNE
 COUNTY: SOMERSET
 STATE: MARYLAND
- PROJECT INVOLVES THE FOLLOWING:
 NEW MAIN: 51,550 L.F. 6" (CS)
- DESIGN IS IN ACCORDANCE WITH ANSI B31.8b AND NATURAL GAS PIPELINE SAFETY ACT OF 1968
- DRAWING REFERENCES:
 MARYLAND SHA ROW PLANS
 MARYLAND TAX MAPS

WETLANDS LEGEND

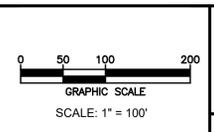
- TIDAL WETLANDS
 - NONTIDAL WETLANDS
 - MEAN HIGH WATER LINE
 - MEAN LOW WATER LINE
 - NONTIDAL WETLAND BUFFER
 - WETLANDS OF SPECIAL STATE CONCERN BUFFER
 - WATERS OF THE U.S. BOUNDARY
 - DATA COLLECTION POINT
- DCP-1



<p>WETLAND DELINEATION PLAN REVISED MARCH 18, 2020 TO INCLUDE ADDITIONAL WETLAND DELINEATION INFORMATION</p>		<p>GEO-TECHNOLOGY ASSOCIATES, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3445-A BOX HILL CORPORATE CENTER DRIVE ABINGDON, MD 21009 TEL: (410) 515-9446 FAX: (410) 515-4895 MRAGTA.COM</p>			<p>CONCEPT SOMERSET COUNTY GAS MAIN EXPANSION SCHEMATIC DESIGN DRAWING (PRINCESS ANNE, MARYLAND)</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">DRAWN BY</td> <td style="font-size: small;">JDT</td> <td style="font-size: small;">5/20/2019</td> </tr> <tr> <td style="font-size: small;">APPROVED</td> <td> </td> <td> </td> </tr> <tr> <td colspan="3" style="font-size: small;">PROJECT NO.</td> </tr> <tr> <td colspan="3" style="text-align: center; font-size: large;">2019.121.00</td> </tr> <tr> <td colspan="3" style="text-align: center; font-size: small;">SHEET 1 OF 8</td> </tr> </table>	DRAWN BY	JDT	5/20/2019	APPROVED			PROJECT NO.			2019.121.00			SHEET 1 OF 8		
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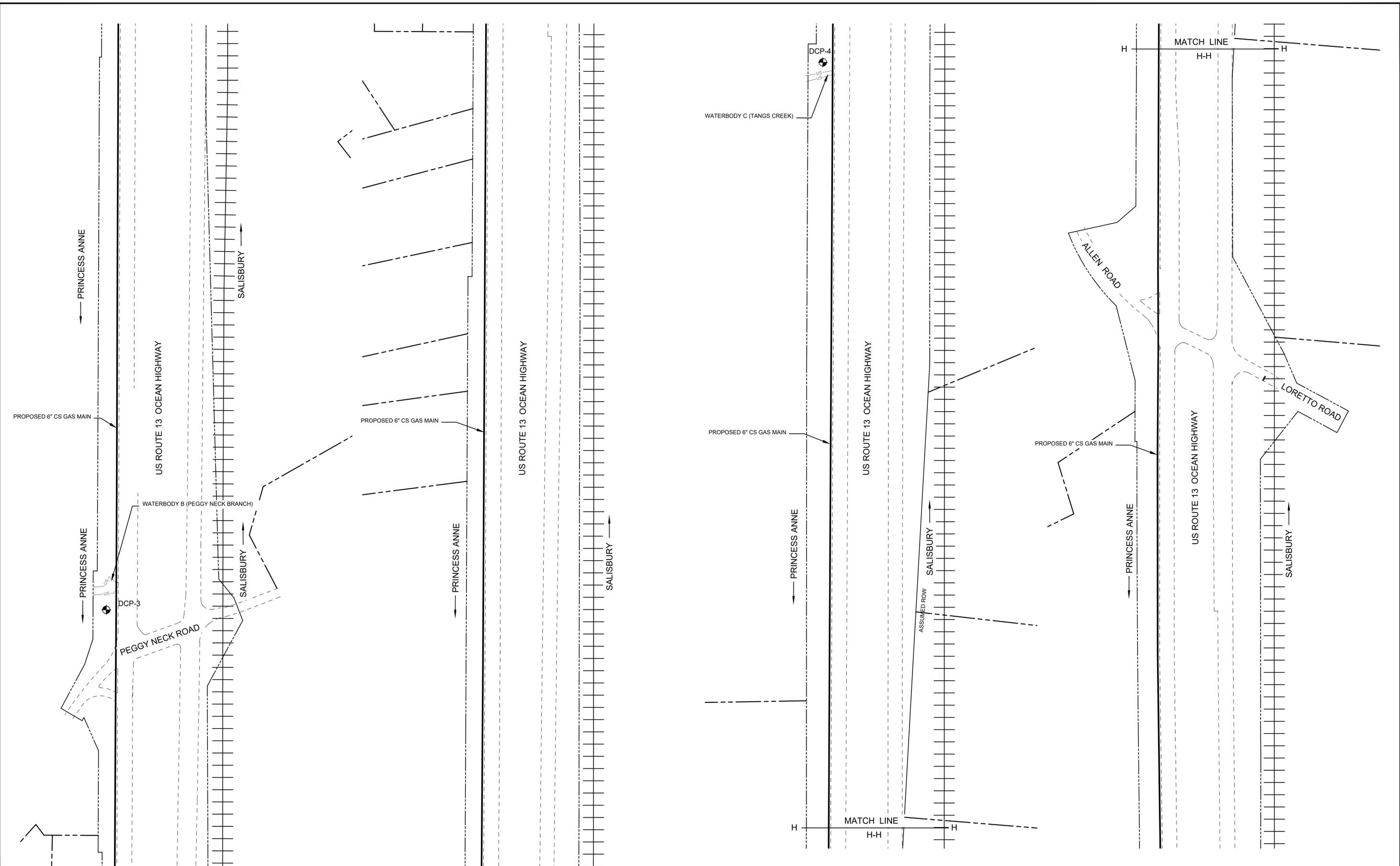


NOTE:
 PROPOSED 6" CS GAS MAIN -
 TO BE INSTALLED IN THE GRASS SHOULDER
 APPROXIMATELY 5 FEET OFF THE EDGE OF
 PAVEMENT AND AT A MINIMUM DEPTH OF 5 FEET

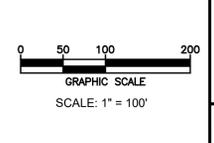


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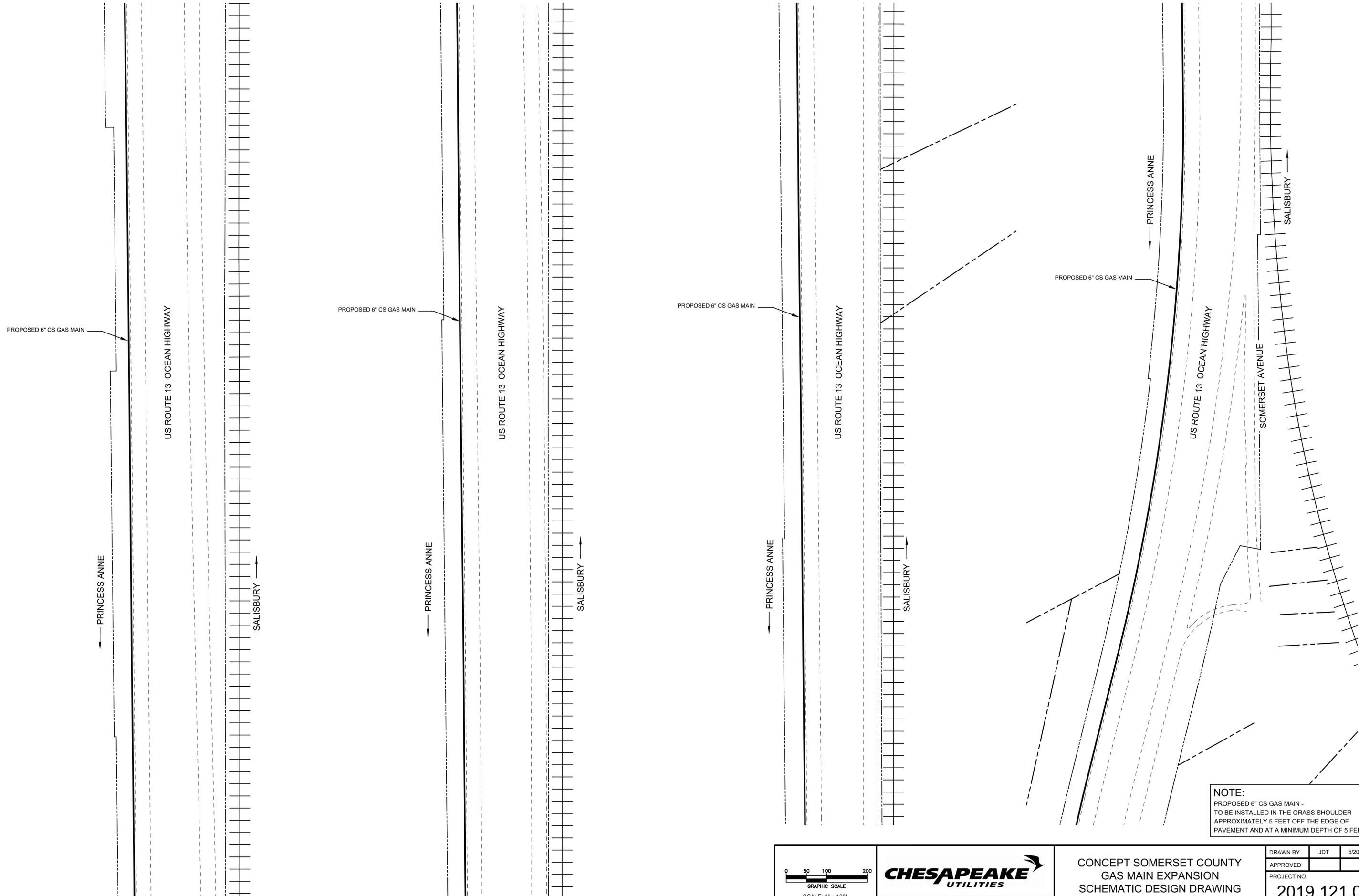


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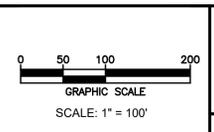


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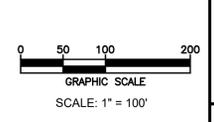


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2019.121.00		
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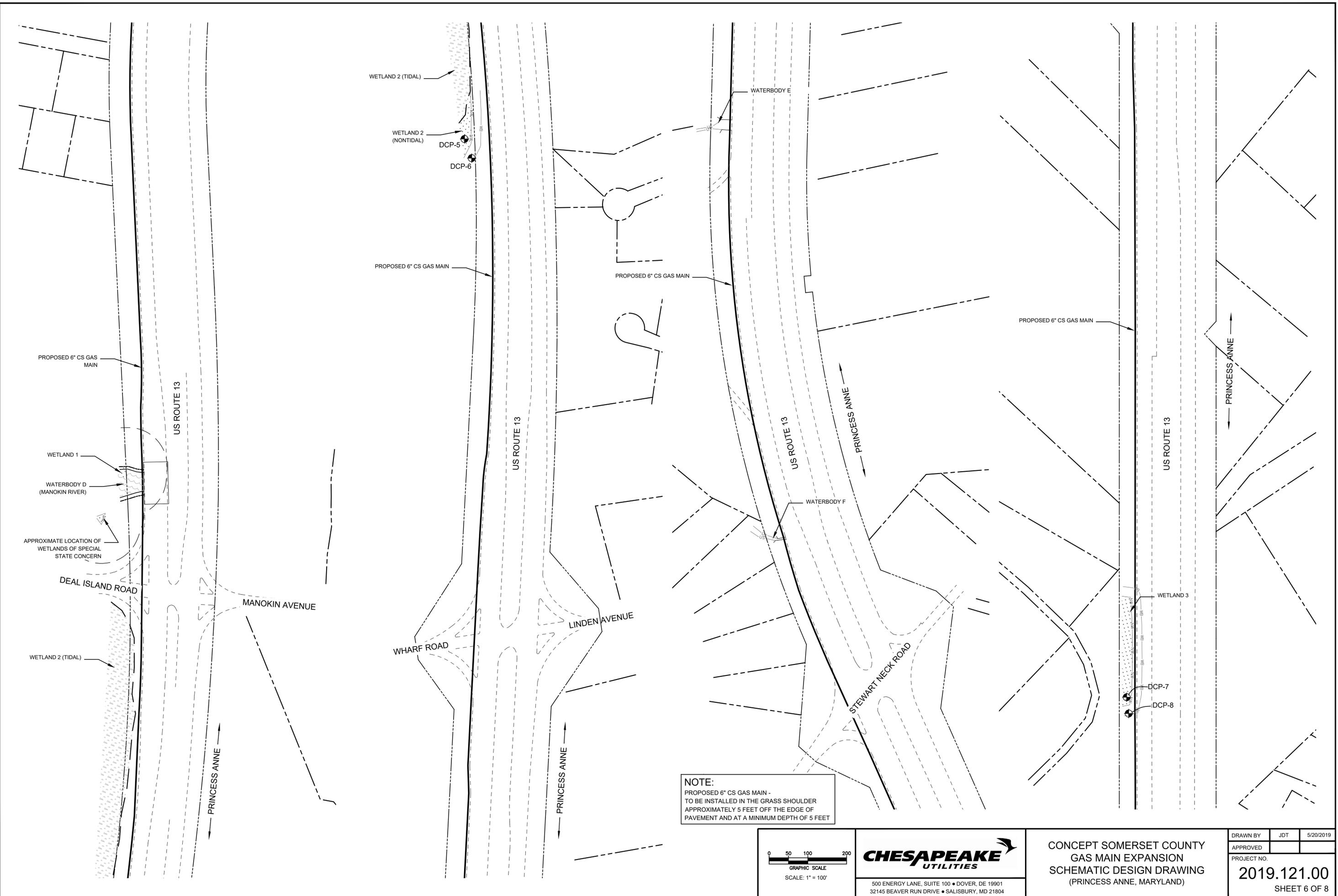


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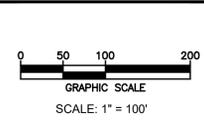


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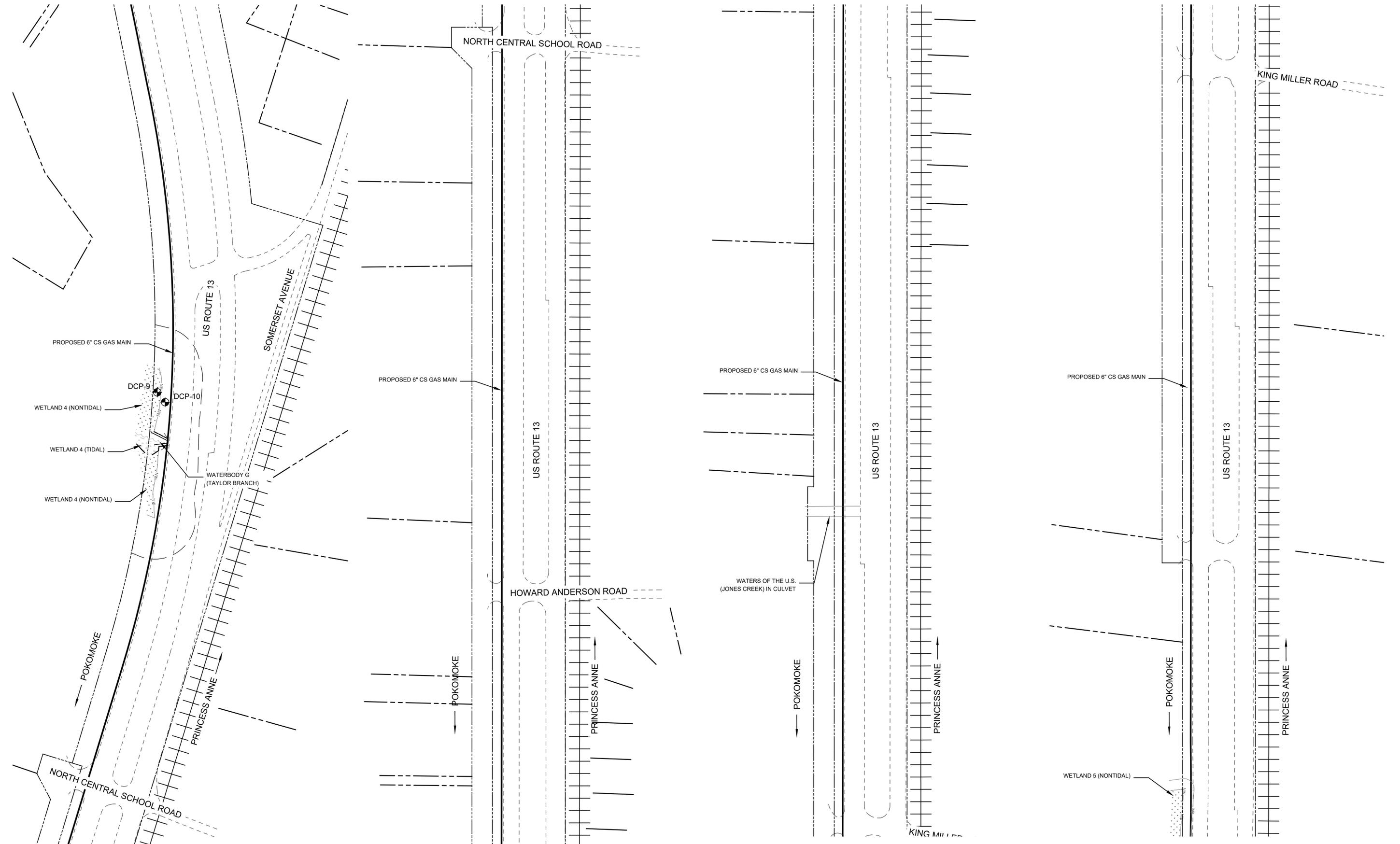


CHESAPEAKE UTILITIES

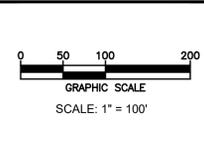
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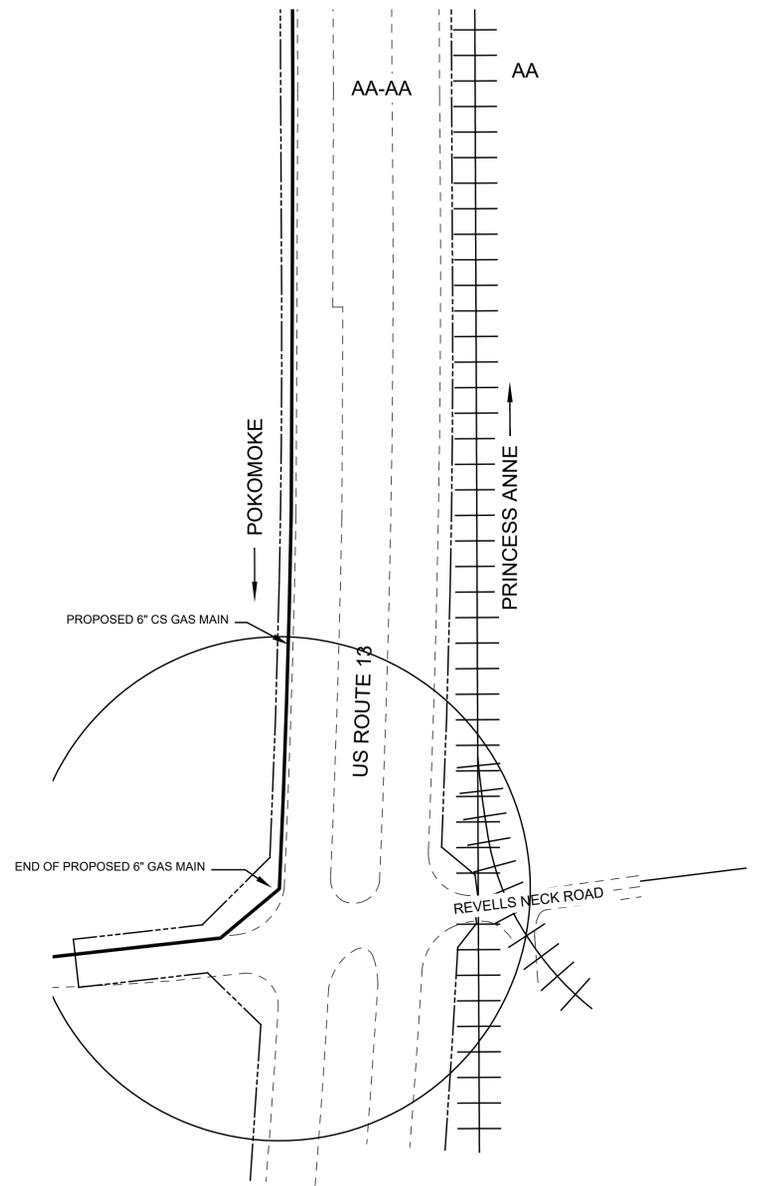
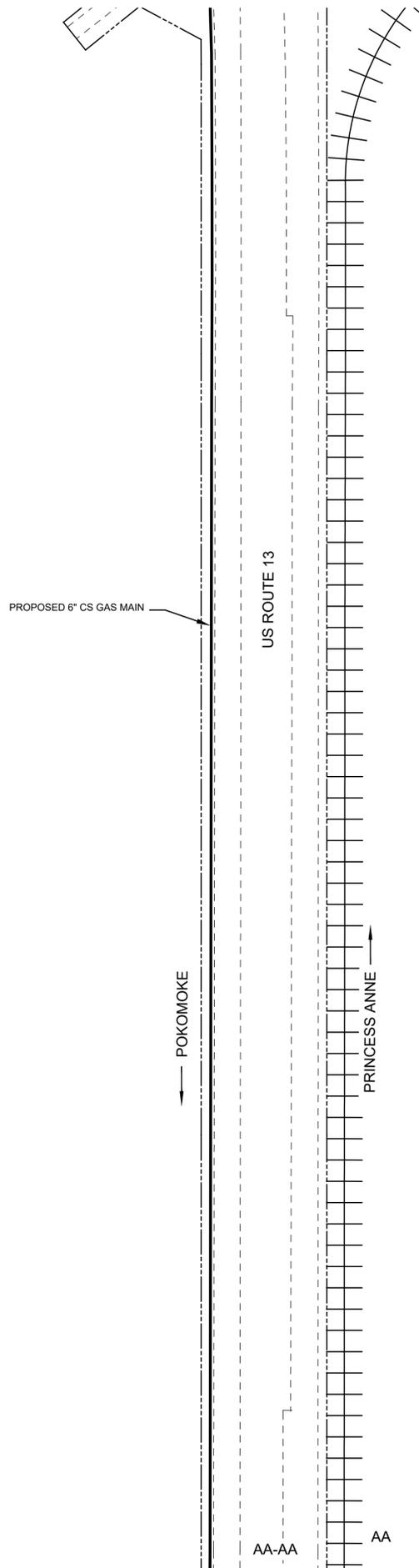
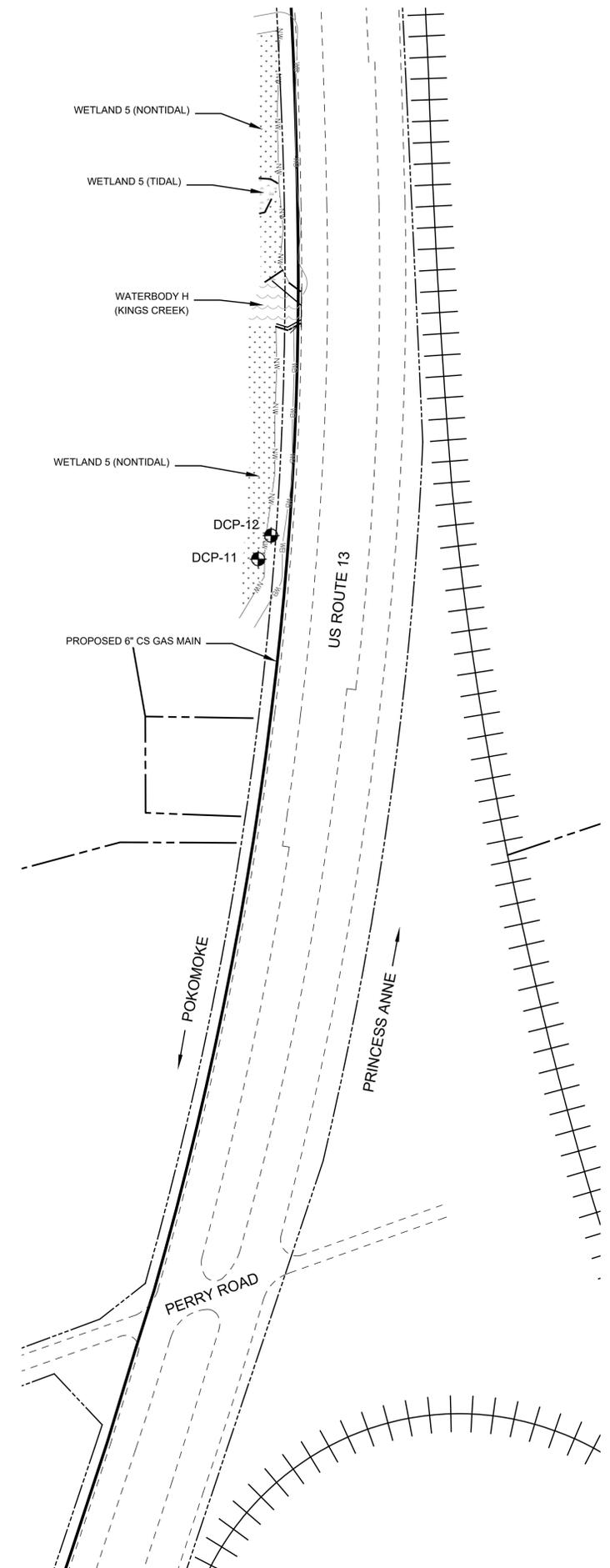


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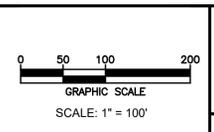


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